

GIFT
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THE Pacific Pharmacist

An Independent Journal Devoted to Progressive Pharmacy

Vol. 10

JUNE AND JULY, 1916

Nos. 2 and 3

Single Copies, Ten Cents.

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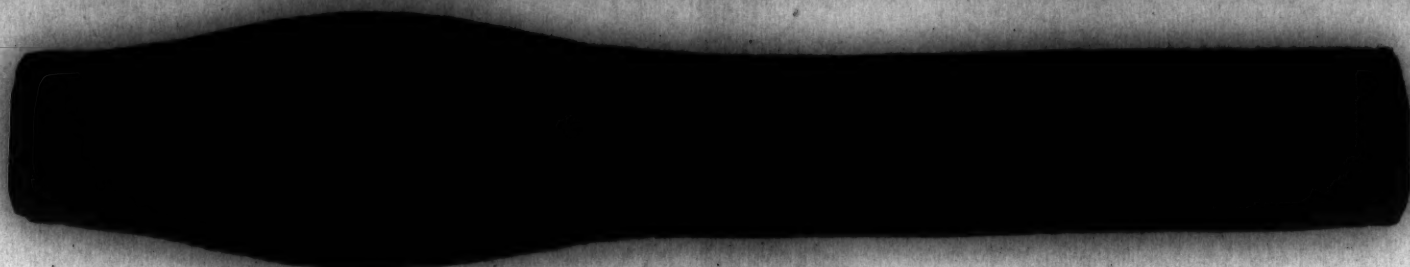
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THE
Pacific Pharmacist

An Independent Journal Devoted to Progressive Pharmacy

Vol. 10

JUNE and JULY, 1916

Nos. 2 and 3

Published on the Fifteenth Day of the Current Month on behalf
of the Pharmacists and in the interests of the Drug Clerks.

F. C. SMITH, Business Manager

Editorial Staff:

R. E. WHITE

J. H. DAWSON

H. B. CAREY

Address all communications and make all checks and money orders payable to The
Pacific Pharmacist, 232 Balboa Building, San Francisco, California.

Communications on questions pertaining to Pharmacy and the Drug Business are
solicited. The name of the writer should accompany every article, not necessarily for
publication, but as a guarantee of good faith.

EDITORIAL

THE METRIC SYSTEM.

The old order changeth and the familiar grain, scruple and dram bid fair to be entirely replaced by the more scientific, easily handled gramme and liter. Are you prepared for the change? Better brush up a little and learn to think in terms of the metric system so that a gramme will no longer be fifteen grains but simply a gramme. An article on this subject in this issue will repay you the time spent reading it.

LOYALTY IN SALESPEOPLE.

The value of Loyalty to an organization cannot be realized until one has seen it at work. It is Loyalty that sends tired feet to the balcony or the basement for items not on the shelf, it is Loyalty that produces that smile and the necessary ounce of tact when the irate customer must be "held at all costs," it is Loyalty that says "We" and feels the hurt at every nickel lost or wasted. Is this Loyalty a part of your store? If not, you are losing money by it.

OPPORTUNITY.

If Opportunity should knock at your door to-morrow and beckon you to follow her into the Fields of Great Endeavor, could you follow her or are you ready? It was Lincoln who

said that he knew not when nor how Opportunity would come, but he was confident that some day it would come, and so he needs must toil unceasingly that when his Opportunity came he would be ready. Let us admit the element of Luck in the shaping of our destinies but the great things that have always and always will guide us to the goal we set our eyes upon are Pluck and Never-Ending Toil.

EXPERT ADVICE FREE.

In these days of fluctuating prices and an unparalleled scarcity of certain drugs it is well to know each week just how the market is going. There is but one way to keep track of these changes in price and that is to keep in constant touch with the salesman who is traveling for the Jobber. This salesman is a veritable gold mine of information and parts with his knowledge readily and freely. He wants no pay more than an appreciative ear. His vision is broad, he meets you and your competitor, he knows conditions and he knows when it is best for you to buy. Develop the salesman, he may give you a pointer that will solve that difficult problem you have been fighting with or he may some day, with a word, save you many a dollar.

MULFORD STAFF HEARS LECTURE ON COLOR STANDARDS.

At the weekly meeting of the Glenolden staff of the H. K. Mulford Company, held Friday, June 9th, Professor H. V. Arny, of the Department of Pharmacy of Columbia University, gave a very interesting lecture on "Color Standards and Colorimetric Assays."

Dr. Arny first told of his work in connection with the standardization of cudbear and caramel, as part of the revision of the National Formulary. This work led him to further investigations of methods of standardizing colors and he found that all of the colors of the spectrum, running from the very lightest to the darkest tints, could be prepared by mixing volumetric solutions of certain salts in definite mathematical proportions. He urged his hearers to make use of color standards in their work, wherever possible, and in the discussion which followed the lecture, several members of the laboratory staff expressed the belief that Dr. Arny's investigations would prove helpful in their experiments.

Professor S. P. Sadtler was present at the meeting and discussed Dr. Arny's lecture, pointing out some of the commercial advantages of proper color standards.

At the conclusion of the meeting, Dr. Arny was given a rising vote of thanks.

TREATMENT OF HAY FEVER WITH POLLEN VACCINES.

It is a well-known fact that certain individuals, on account of a natural susceptibility, become sensitized to the pollens of various plants, and when they later come in contact with these pollens, they experience the distressing symptoms to which the name "hay fever" is usually applied. The attempt to desensitize these individuals by administering subcutaneously extracts of the pollens

to which they are sensitive has met with such success that it is now recognized as the only effective means of relieving this condition.

Hay fever is prevalent at two seasons of the year, namely, spring and fall. A variety of pollens may produce hay fever, but it is a generally accepted fact that in America "spring" hay fever is due in the majority of cases to pollens from the Gramineae. "Autumnal" hay fever, on the other hand, is due principally to the pollens of ragweed, goldenrod and maize.

This is the season of the year when vaccination against autumnal hay fever should be begun. Hay Fever Vaccine "Fall" Mulford contains the protein extract from the pollens of ragweed, goldenrod and maize, dissolved in physiological saline solution, and accurately standardized, and may be used without preliminary diagnostic tests.

The H. K. Mulford Company of Philadelphia has issued a "Working Bulletin" on Hay Fever Vaccine, which gives complete information regarding the treatment of this troublesome malady. Readers of this journal who desire to send copies of this "Working Bulletin" to physicians in their neighborhood may obtain a supply from the company upon request.

GETTING IT DONE.

Many people believe that if you want something done quickly, give it to the busiest man you know; he doesn't dare lay anything aside and has to shovel all the time to keep from being snowed under.

What It Means to a Scot

"I see they have just dug up a corner stone of a library in Greece on which was inscribed '4000 B. C.,"' remarked a student to a Scotsman. "What do you suppose it means?"

"It canna mean bu' one thing," answered the Scot solemnly: "Before Carnegie."—Ladies Home Journal.

SOME FALLACIES REGARDING PHENOL*

A Review With Reports of Observations on the Influence of Ethyl Alcohol on the Germicidal and on the Toxic Properties of Phenol.

By MARTIN I. WILBERT,

Technical Assistant, Hygienic Laboratory, United States Public Health Service.

There are probably few official drugs regarding which more misleading statements have been made than phenol, or, as it is more widely known, carbolic acid. This substance was first recognized by Runge (1834), who called it carbolic acid to indicate its nature and origin; an oil-like liquid, obtained from coal, that has much in common with well-known acids. Phenol was early confounded with creosote, isolated by Reichenbach (1832) from beechwood tar, and under the name coal-tar creosote an impure commercial phenol was long listed and freely sold to less well-informed dealers, who unknowingly substituted this more poisonous commercial product for beechwood creosote for internal use.

With the advent of crystalline phenol and its subsequent use as an antiseptic in surgical practice, better informed medical practitioners began to appreciate the difference between the two products, but even at the present time it is not uncommon to find commercial grades of phenol referred to as coal-tar creosote.

The widespread use of phenol as an antiseptic and a disinfectant by medical practitioners served to bring it to the attention of the laity as a poison, and as early as 1890 it was asserted that phenol or carbolic acid was employed more frequently by suicides than any other drug.

The toxicology of carbolic acid early attracted attention, and a record of the substances that have been recommended as antidotes for phenol poisoning,

with a review of the reasons for recommending them, would be an interesting study in that it would tend to emphasize the futility of basing conclusions on incomplete or at times misleading observations.

The use of fixed oils, of glycerine, and of diluted sulphuric acid, and the use of the soluble sulphates of the alkalies and alkali earths, while apparently justified on the basis of the earlier observations, have long since been recognized as being inefficient and in many instances distinctly harmful.

The rather widespread use of ethyl alcohol as an antidote for phenol poisoning and the studious avoidance of ethyl alcohol as a diluent for phenol used as an antiseptic or disinfectant, while long since shown to be based on erroneous reasoning, still persist and, as will be noted later, the belief in the efficiency of ethyl alcohol as a detoxicant for phenol appears to be growing rather than decreasing.

It was early found that alcohol is a better solvent for phenol than is water, and it was also found that mixtures of phenol with alcohol, fixed oils, glycerin, or camphor were less caustic than phenol alone, and under some conditions appeared to be less toxic than solutions of phenol in water.

Glycerin, it was early observed, will lessen the caustic local action of phenol on the skin, but experience has since shown that it will not prevent the production of gangrene nor the absorption of phenol.

A mixture of phenol and glycerin was recommended by Nathan Rose-

* Reprint from the Public Health Reports, vol. 31, No. 17, Apr. 28, 1916, pp. 1046-1054.

water and others (Am. J. Phar., 1895, v. 67, p. 221) as a safe and efficient substitute for phenol. In recommending this mixture, it was pointed out that "not being as caustic as phenol it can not result in as much mischief or fatality if taken internally, either accidentally or on purpose."

Harrison Allen, as editor of *A Handbook of Local Therapeutics* (Philadelphia, 1897), makes the assertion that "carbolic acid dissolved in oil or in alcohol is inert. Anthrax spores were found to be unaffected after lying upward of three months in a five per cent. solution of carbolic acid in oil and equally so by 70 days' exposure to a five per cent. solution in alcohol. Even the sensitive anthrax bacilli were not destroyed by a five per cent. solution of carbolic acid in oil."

Dr. Seneca D. Powell, of New York, was among the first to systematically recommend the use of alcohol as an antidote for phenol. He based his recommendation on the naive but evidently fallacious deduction that the action of alcohol in the stomach must be analogous to its action on the unbroken skin.

Phelps (N. Y. M. J., 1899, v. 69, p. 62) appears to have been the first to call attention in print to the antagonism of alcohol to phenol. He quotes Dr. Seneca D. Powell, who in his clinics at the Post-graduate Hospital demonstrated the antidotal value of alcohol by consecutively rinsing his hands in liquid phenol and then in alcohol.

Since that time alcohol has frequently been recommended and largely exploited as an antidote to carbolic acid, despite the fact that it is of little value other than as a diluent. The exploitation of alcohol as an antidote and as a possible prophylactic for phenol poisoning has led to its recognition in State and other laws designed to restrict the sale and use of various poisons.

Williams (Drug. Circ., March, 1900, p. 46) was among the first to make the suggestion that, "in view of the frequently made assertion that grain alcohol is an efficient antidote for carbolic acid and that this poison may be taken with impunity if immediately followed by alcohol, it would appear that a mixture of phenol and grain alcohol would be a comparatively safe household preparation. The claim of the comparative innocuousness of carbolic acid under the conditions named is apparently well founded."

This fallacious suggestion has been embodied in several State and local laws and regulations designed to restrict the sale of carbolic acid. These laws usually provide that the requirements embodied therein do not apply to the sale of crude carbolic acid or to the sale of a solution or mixture containing equal proportions of carbolic acid, glycerin, and alcohol. That this misleading statement, originally made more than 20 years ago, is still a factor in the enactment of restrictive legislation is apparent from a paragraph embodied in the recently (1915) enacted laws of California and of Utah. These laws provide that the restrictions relating to the sale of carbolic acid do not apply to solutions of carbolic acid ("phenol") containing not over 10 per cent. of carbolic acid ("phenol") and not less than 10 per cent. of ethyl alcohol.

The same line of reasoning which led to the belief that ethyl alcohol is an efficient prophylactic and antidote for phenol because of its power of removing phenol from the skin also led to a rather widespread belief that mixtures of phenol with alcohol or solutions of phenol and alcohol in water are less efficient as antiseptics or disinfectants.

Taylor (J. Biol. Chem., 1908-9, v. 5, p. 319) in a report of an experimental study with alcohol-resistant yeasts to determine the antagonism of alcohol to phenol, concludes that this supposition

appears to have some physical basis but is not due to any chemical detoxication of phenol by ethyl alcohol. From his experiments he concludes that alcohol does not reduce in the least the antiseptic action of carbolic acid, the toxicity of the phenol not being at all involved. With a high concentration of alcohol and a low concentration of phenol the alcohol seemed to increase to some extent the antiseptic value of the phenol.

Taylor concludes "that there is no chemical detoxication of phenol by ethyl alcohol and that the effects observed in therapeutic practice must rest upon some physical basis." He also points out that recent investigations by Sollmann support this conclusion.

Zemp (N. Y. M. J. 1909, v. 89, p. 476) appears to have been among the first to question seriously the value of ethyl alcohol as an antidote to phenol. He says: "That alcohol is a splendid solvent for many drugs is recognized by all. It is because of this power that it has been recommended as an antidote

to carbolic acid. No chemical action takes place when these two drugs are brought together. The carbolic acid is simply diluted, hence its caustic power is diminished."

Macht (J. H. Hosp. Bull. 1915, v. 26, p. 98-104) reports an experimental study of lavage in acute carbolic acid poisoning in which he clearly demonstrates that contrary to popular experience and belief the internal use of alcohol in cases of phenol poisoning may be unfavorable. The conflicting opinions in regard to the use of alcohol are somewhat reconciled by his investigations. He finds that the influence of alcohol depends on the time of administration. If it is given after the ingestion of phenol, as must be the case therapeutically, the symptoms will be aggravated, the alcohol acting as an excellent solvent for phenol, promoting rather than retarding its absorption, so that death may actually be hastened. On the other hand, he found that an animal previously intoxicated with alcohol can withstand better the effects of phenol taken afterwards.

A VICTORY FOR AMERICAN PHARMACISTS IMPROVED RANK IN THE UNITED STATES ARMY

By DR. GEORGE F. PAYNE, Atlanta, Ga.

The pharmacists of the United States and the Pharmaceutical Press which have worked so faithfully since 1894 for the better recognition of pharmacy in the United States Government Service, along modern lines, are now able to congratulate themselves upon the very signal success of their recent campaign of education in behalf of the pharmacists of the United States Army.

A very large number of pharmacists in every State in the Union have given much valuable time and have written many letters in behalf of this important work, and every one of them will realize with a thrill that feeling of work well done, when they learn that House Bill No. 12766 has passed both the House and Senate

and has been signed by the President and that pharmacists in the three branches of the United States Government Service, the Army, Navy and Public Health Service, who barely outranked the negro cook in 1894 when they began this work, are now Warrant Officers in the Army and Public Health Service and Commissioned Officers in the Navy. This bill is now a law. It was submitted to Congress by Representative James Hay of Virginia, chairman of the House Committee on Military Affairs and to the Senate by Senator George E. Chamberlain of Oregon, chairman of the Senate Committee on Military Affairs. This act incorporates what we asked in the Hughes-Bacon Bill and which was pushed so energetically by

us all at the last session of Congress. Our work has ripened into excellent results.

This act changes the name of "Hospital Corps" into that of the "Medical Corps of the U. S. Army." There will be higher rank and better pay. There will be two additional higher grades and rank above the present one of Sergeants First Class. While the act does not give commission to the pharmacists of the Army, it does give to the highest grade practically the rank of Warrant Officers, which is next to that of Commissions.

The act contains the following provision:

1st. The Hospital Corps will become a part of the Medical Department.

2nd. There will be a new rank of "Master Hospital Sergeants" with \$75 a month and the allowances for food and clothes of Master Engineers, Senior grade. They shall be appointed by the Secretary of War after a satisfactory examination in Pharmacy by a board of one or more medical officers under regulations prescribed by the Secretary of War, and with at least one year's competent service as a Sergeant, First Class, and no person shall be designated for such examination except by authority of the Surgeon-General.

3rd. There will be a new rank of "Hospital Sergeants" with \$65 a month and the allowances for food and clothing of Master Engineers, Junior Grade.

4th. The present Sergeants, First Class, will have \$50 a month and the same allowances as Sergeants, First Class Corps of Engineers.

5th. Sergeants \$36, Corporals \$24, and Cooks \$30 will have the pay and allowances of like grades in the Corps of Engineers.

6th. Original enlistments for the Medical Department shall be made in the grade of Privates, \$15 and allowances; Privates, First Class, \$18 and

allowances. They shall be eligible for additional pay as follows:

As dispensary assistant...\$2 a month
As nurse\$3 a month
As Surgical assistant.....\$5 a month

7th. The total percentage of all enlisted men in the Medical Department shall not exceed 5 per cent. of the total enlisted army and grades shall not exceed:

8th.—

Master Hospital Sergeants, $\frac{1}{2}$ of
1% of the above..... 5%
Hospital Sergeants, $\frac{1}{2}$ of 1% of
the above..... 5%
Sergeants, First Class, 7% of the
above 5%
Sergeants, 11% of the above..... 5%
Corporals, 5% of the above..... 5%
Cooks, 6% of the above..... 5%

The peace basis is 175,000 enlisted men not counting certain units. This will be about:

43 Master Hospital Sergeants.
1162 Sergeants.
43 Hospital Sergeants.
437 Corporals.
612 Sergeants, First Class.
525 Cooks.

In this enlargement of the army to 175,000 there will be 86 of the two new ranks; or more, if the army shall be larger. The present United States Army is now being organized under this act, and if put on a war basis for service in Mexico it will be much larger.

It will give a good proportion of the present Sergeants, First Class, a substantial advance to the two higher ranks and the present Sergeants will have the Sergeant's First Class positions which are vacated. There will be improvement in every direction.

The conditions which have been a disgrace to pharmacy are now wonderfully bettered all along the line by the earnest work of thousands of American pharmacists in educating Congress and the public. Many of these pharmacists are not members of any pharmaceutical organization. This

work shows what pulling together can do. Our Association needs you and we offer you a cordial invitation to become one of us—we need your ability and courage and you need our organization that your brains and energy may be more fully recognized as they deserve in the further work for the advancement of American pharmacy. Those Association members who have worked practically unanimously in behalf of this good cause and have kept at it so persistently and so undiscouragedly under many adverse circumstances have

been a splendid nucleus around which all could rally. Practically every officer down to the quietest member have been ever ready to help in this good work. To them all "we take off our hat."

This is not the work of one man nor of a dozen men, but the work of us all pulling together as men should to win, and our fellow members must feel more strongly united than ever as they fully comprehend how much they have accomplished by sticking together and working toward better conditions.

SAVINGS OF WASTE PAPER

How to Select, Assort, and Dispose of Waste Paper, Rags, and Other Paper-Making Materials.

Rags and old papers are used in very large quantities for manufacturing paper. Part of this material is collected in the United States, although the imports are about 50 per cent. of the amount used each year. Imports of rags and old papers during the past few months have decreased to such an extent that there has recently been almost a famine of paper-making raw material. The decrease in imports is very largely due to conditions abroad. Several foreign governments, realizing the scarcity of paper-making material, have forbidden its export to other countries. This condition is widespread in its effect, and as the demand for raw material is greater than the supply, prices have advanced.

The effect of this increase in cost of all paper-making raw materials has been to make corresponding increases in the cost of all kinds and grades of paper. It is wise to save waste paper, rags, etc., for they are valuable. There is at present an increased demand for paper, cardboard, etc., in the United States. The present daily production of paper of all kinds is over 15,000 tons. The present daily consumption of old papers of all kinds

for remanufacture is estimated at about 5000 tons. Competent authority states that rags form 7.8 per cent. of the fibres we use in paper making. Waste papers, books, magazines, etc., form 21.4 per cent. About 123,000 tons of rags and 380,000 tons of waste papers, etc., were imported in 1913.

Saving old paper and rags means a saving of the forests. The hearty co-operation of every man, woman and child is essential if the collection of waste materials is to be made a success.

What to Save.

Clean white cotton or linen rags and clean unbleached cotton and linen rags are always in demand. Scraps and small pieces are just as suitable as much larger pieces. The finest grades of paper are made from such material and the demand for such rags is always steady.

Cuttings from fancy shirtings, table damasks, toweling, cotton and linen dress goods, etc., are in demand and are readily sold.

Soiled white rags, both new and used rags, enter into the composition of a very large variety of high-grade white and colored papers.

Soiled and dirty colored rags,

known to the mills as "thirds and blues," except the black and dark-red colored ones, make up the largest amount of any single grade of rags used in the manufacture of high-grade book papers and medium-grade writing papers. In this class is included old canvas, awnings, sailcloth, and all kinds of soiled rags. No light-colored rag is too dirty to be used, as the manufacturing process converts the dirtiest rag into a white mass, whiter than the original cotton from which it was made.

Black rags, especially old black stockings, are in general demand. They are used in producing black papers and especially for mixing with lighter-colored paper stocks, thereby producing the effect known as granite papers.

Woolen rags of all kinds are of value; the higher grades are returned to the woolen mill for remanufacture, while the lower grades are in demand for manufacture into roofing papers or roofing felts. These roofing felts, after being saturated with tar, pitch, or asphaltum products, are used under concrete cellar floors, building foundations, etc., to make buildings damp proof. Roofing felt is also extensively used for roofs of buildings and gives excellent service as protection against rain. When saturated with asphaltum it is slow burning, and produces a roof that has excellent fire-resisting qualities.

Attention is especially called to the wide range of uses for which rags and old papers of all kinds are available. All grades should be saved, as the rag packer and the paper maker will find a use for them. The highest grades will go into the higher grades of paper, while even the lowest grades of this waste material can be made into box board. The product known as box board is an excellent substitute for wood used in the manufacture of wooden boxes, and when made into shipping containers it is fully as strong and very much

lighter than the wood which it replaces. The saving of this material, therefore, produces a new superior product and at the same time conserves our forests.

White clippings and shavings from book papers, bond papers, ledger papers, and writing papers are especially valuable, and a steady demand for such material is always found.

Printers' waste, consisting of paper damaged in printing, paper used to clean ink from the inked forms and rollers of printing presses, and other soiled printing waste, is available for remanufacture into many different grades of paper.

White and colored writing papers are suitable for remanufacture into many other grades after the ink and coloring matter are removed.

Clean wrapping papers of all kinds are valuable for remanufacture into similar grades.

Old books, magazines, periodicals, accounts books, etc., can be remanufactured into book papers of excellent quality. All material of this kind that is saved is of direct benefit to the forests of the country, as magazine and book papers are very largely made from wood pulps.

Clean folded news paper is suitable for a number of paper products and is in demand.

All grades of cardboard, strawboard, corrugated box board, and soiled wrapping papers, newspapers, etc., are suitable and in demand for remanufacture into cardboard required to make containers for packing crackers, cereals, and other food products. The process of remanufacture is such that the material used is thoroughly sterilized. The demand for clean food products requires that all old papers must be saved.

Burlap bagging and manila rope are also of value in the production of strong wrapping papers, and the supply of this material is always less than the demand.

In the household no attempt need

be made to secure an accurate separation of waste paper and rags into the ultimate grades required by the paper industry. The degree of separation of these materials should depend in large part upon the amount on hand and the method of disposal of these collected waste materials. Many householders prefer to give all their waste paper and rags to charitable organizations rather than bother with the sale of small quantities. Organizations of this type, when requested, will call and receive usable waste material of all kinds. One of their chief sources of income is from the collecting, sorting, and resale of such material which they use to support their beneficent work. Material given to them will be gladly received and forwarded to the proper destination.

Grading for Apartment Houses, Small Stores, etc.

For the information of those having more waste material than may be collected by the average small householder, the following grades are suggested. They would be suitable for the amount of material available from apartment houses, small stores, hotels, etc.:

1. Clean cotton and linen rags.
2. Soiled cotton and linen rags, including old canvas, awning, etc.
3. Woolen rags and old woolen clothing.
4. Burlap bagging.
5. Books and magazines.
6. Clean folded newspapers.
7. Clean wrapping paper.
8. Mixed papers consisting of soiled news, wrapping, cardboard, box board, etc.

NOT ON PARADE.

Bill—Where's your brother?

Jill—Oh, he's down town, learning to drill.

Bill—Ah! Is he going to be a soldier?

Jill—No; a dentist.—Yonkers Statesman.

THE RELATION BETWEEN THE PHARMACIST AND THE MERCHANT.

By H. M. WHELPLEY, St. Louis.

The relation between the pharmacist and the physician is a threadbare but not exhausted subject. It will remain timely as long as both medicine and pharmacy exist. It is held together by the professional tie which places the welfare of the patient and the customer above that of the practitioner and of the dispenser of medicine. Like the lawyer and the minister, the pharmacist must be anxious to serve humanity with skill, no matter what the financial returns may be. But this is not the burden of my message on this occasion. Every professional man or woman, no matter whether lawyer, physician or pharmacist, should use judgment in the selection of a location. This, no one hesitates in trying to do. Such an act on the part of a doctor is called the exercise of judgment.

The grocer gives evidence of business foresight and the United Cigar Stores take advantage of mathematical exactness in locating stores. No matter what the name, the principle and the object to be attained are the same. The member of a profession who ignores the laws of business is likely to become an object of charity.

The pharmacist of to-day is obliged to handle goods that are mere merchandise. Not even the study of a quiz compend is necessary in order to qualify for the duties which occupy the greater part of a pharmacist's long day of service. His time is largely taken up with the buying, displaying and selling of goods as if he were a merchant without professional training or duties. This being the case, why should he not follow the methods of merchants in keeping up with the times?

You must comply with the pharmacy law or you cannot continue in business. Close competition is such that you need a schooling in the sci-

ence of business in order to have your ledger balance on the right side. How many pharmacists realize this fact?

Schools of pharmacy turn out pharmacists but they, as a rule, do not make merchants. At one time it was taken for granted that good salesmen, like poets and artists, were born to excel in their vocation. Now salesmen are drilled and trained like soldiers and sailors. You despise the department stores and fear the chain stores. Permit me to tell you that you can profit by studying the merchant methods of both of them. Merchandising is by no means a haphazard occupation. It is outgrowing the art class and becoming a science. Do not let your professional inclination prevent you from taking full advantage of the growing science.

We now have periodicals on salesmanship and buying. How many pharmacists ever see them? I would recommend looking over such trade periodicals as are devoted to the interests of groceries and other lines, such as the following:

National 5-10-&-25c Magazine, \$1.00 a year, New York City;

Playthings, \$1.00 a year, New York City;

Merchants' Record & Show Window, \$2.00 a year, Chicago, Ill.;

The 5 and 10c Store Magazine, \$1.00 a year, Cincinnati, Ohio;

Grocers' Magazine, \$1.00 a year, Boston, Mass.;

Paint & Varnish Record, \$1.00 a year, Chicago, Ill.;

Oil, Paint & Drug Reporter, \$1.00 a year, New York City;

Cigar & Tobacco Journal, \$1.00 a year, Minneapolis, Minn.;

The Tobacco Leaf, \$1.00 a year, New York City.

What is more, pharmacists should follow the advice of President J. E. Kopponbrink, of the Missouri Pharmaceutical Association, and cooperate with the State trade organizations

like the Missouri Retail Merchants' Association.

The new Pharmacopoeia and the revised National Formulary are now in the pharmaceutical eye. Do not let them overshadow such books as the following:

Newspaper Advertising, \$4.00, by G. H. E. Hawkins Advertising Publishing Co., Chicago, Ill.

Fifty-six Advertisements for Druggists, \$5.00, by W. H. Cousins, Southern Pharmaceutical Journal, Dallas, Tex.

The Druggist and His Profits, \$1.00, by Harry B. Mason, E. G. Swift & Co., Detroit, Mich.

Window Displays for Druggists, \$1.00, by Harry B. Mason, Swift & Co., Detroit, Mich.

350 Dollar Ideas for Druggists, \$1.00, by Harry B. Mason, E. G. Swift & Co., Detroit, Mich.

Show Window Backgrounds, \$1.50, by Geo. J. Cowan, The Dry Goods Reporter Publishing Co., Chicago, Ill.

Successful Advertising, \$2.00, by Geo. J. Cowan, The Dry Goods Reporter Publishing Co., Chicago, Ill.

Textbook on Tobacco, \$1.50, by Carl Werner, The Tobacco Leaf Publishing Co., New York City.

Memory: How to Develop, Train and Use It, \$1.10, Wm. W. Atkinson, The Elizabeth Towne Co., Holyoke, Mass.

Your Willpower, 50c, by Chas. G. Leland, The Elizabeth Towne Co., Holyoke, Mass.

How to Read Human Nature, \$1.10, by Wm. W. Atkinson, The Elizabeth Towne Co., Holyoke, Mass.

The Manual of Successful Store-keeping, \$7.00, by W. H. Hotchkin, Associated Advertising Clubs of the World, Indianapolis, Ind.

Speed Talks, \$1.00, A. B. Lyons, The Sheldon School, Chicago, Ill.

How to Be Personally Efficient in Business, \$2.00, A. W. Shaw Co., Chicago, Ill.

The Psychology of Salesmanship, \$1.10, by Wm. W. Atkinson, The Elizabeth Towne Co., Holyoke, Mass.

Ginger Talks, \$1.00, by W. C. Holman, The Sheldon School; Chicago, Ill.

Letters That Make Good, \$5.00, by Poole and Buzzell, American Business Publishing Co., Boston, Mass.

Effective Business Letters, \$2.00, by E. H. Gardiner, The Roland Press Co., New York City, N. Y.

Advertising and Selling, \$2.00, by H. L. Hollingworth, D. Appleton & Co., New York City, N. Y.

Salesmanship, Department and System, \$1.00, by Wm. A. Corbion, George W. Jacobs & Co., Philadelphia, Pa.

Retail Advertising Complete, \$1.00, by Frank Farrington, Byxbee Publishing Co., Chicago, Ill.

Store Management Complete, \$1.00, by Frank Farrington, Byxbee Publishing Co., Chicago, Ill.

Principles of Publicity, \$2.10, by T. A. DeWeese, George W. Jacob & Co., Philadelphia, Pa.

Talks by the Old Storekeeper, \$1.00, by Frank Farrington, Byxbee Publishing Co., Chicago, Ill.

More Talks by the Old Storekeeper, \$1.00, by Frank Farrington, Byxbee Publishing Co., Chicago, Ill.

The Clerk's Book, 50c, by Frank Farrington, Byxbee Publishing Co., Chicago, Ill.

Retail Advertising for Druggists and Stationers, \$1.00, by Frank Farrington, Byxbee Publishing Co., Chicago, Ill.

John Martin's Clerks, 50c, by Frank Farrington, Byxbee Publishing Co., Chicago, Ill.

The Art of Decorating Show Windows and Interiors, \$3.50, The Merchants' Record Company, Chicago.

Collecting by Letter, Vol. 2, \$3.00, by Wm. A. Shryer, Business Service Corporation, Detroit, Mich.

A very successful retail pharmacist of Saint Louis recently paid ten dollars for a book of the above class and made his money back at once by following out two of the new ideas it contained. Most of these books can

be obtained in libraries of the larger cities.

Harry B. Mason, editor of the Bulletin of Pharmacy, recently made an address before the Illinois Pharmaceutical Association on the subject of "Modern Merchandising Methods." He talked about grocers, the sale of automobiles and almost every kind of merchandising outside of the sale of gold bricks. He got away from pharmacy but gave pharmacists one of the most useful talks that I ever heard. This great world war is obliterating many landmarks and among them the line between pure science and applied science. Let us realize that the science of pharmacy and the science of merchandising are also compatible. The lean and hungry pharmacist of Shakespeare was not a merchant, but the apothecary of to-day must understand buying and selling or he will not survive the changes now going on in the professions and in the trades.

Read before the Missouri Pharmaceutical Association at Excelsior Springs, June 13, 1916.

SOUTHERN FEVER.

"Some un sick at yo' house, Mis' Carter?" inquired Lila. "Ah seed de doctah's kyar eroun' dar yestiddy."

"It was for my brother, Lila."

"Sho! What's he done got de matter of'm?"

"Nobody seems to know what the disease is. He can eat and sleep as well as ever, he stays out all day long on the veranda in the sun, and seems as well as any one; but he can't do any work at all."

"Law, Mis' Carter, dat ain't no disease what you brothe' got. Dat's a gif!"—Everybody's.

The annual per capita fire waste in the United States is \$2.51, in Europe, 33c. Cause: The latter has better construction, less carelessness, increased responsibility.

THE PRODUCTION OF OIL FROM EVERGREEN TREES

Shoe-blackening owes its peculiar aromatic odor, faintly suggestive of the deep woods where spruce or hemlock needles pad the ground, to an oil which is manufactured from these same kinds of needles. Similar oils are obtained from the foliage and small twigs of various cone-bearing trees, and find use for a number of purposes. In Europe the finer of these oils are used extensively as perfume in soap and bath powders. They are common components of liniments and other medicinal preparations. Cedar oil is chiefly used in the preparation of insecticides, and, to some extent, in making liniment.

Investigations of the yield and the value of the oil obtainable from some of our southern and western trees have been made by the Forest Service, partly with a view to the possible utilization of waste material left after lumbering in the National forests. In these investigations, long-leaf and western yellow pine leaves, the latter distilled in California, produced the most promising results, but the needle oils obtained from these pines did not surpass the already firmly established spruce and hemlock oils. The large quantities of needles and twigs on Forest Service timber sale areas are not only a sheer waste, but also form a special fire hazard. An increased market for leaf oil would make possible the utilization of some of this waste material.

The industry, though small, is fairly old in the United States. The value of the annual production of needle oil is about \$50,000. Black and white spruce and eastern hemlock produce very similar oils, 40,000 to 50,000 pounds annually, worth 45 to 60 cents per pound. Red cedar produces 15,000 to 20,000 pounds of oil having the same value per pound as the spruce and hemlock oil. A few other species

furnish the rest of the conifer-leaf oil produced in the United States. Besides the home product, small quantities of needle oil are imported from Europe. One of these, silver fir oil, brings four dollars a pound. In most cases these oils have a pleasant odor. A few are disagreeable when first distilled but become pleasant with age.

The greater portion of the oil produced in the United States is distilled by small farmers in New England during the winter months when farm work is slack. In 1912, a Seattle firm began the distillation of leaf oil from western red cedar on a large scale, but found that at the going market value of 40 cents a pound the oil scarcely repaid the cost of production. It was chiefly used in manufacturing an insecticide containing 35 per cent. of cedar oil and 65 per cent. of an absorbent made from the finely ground shells of peach pits. Four dollars and a half to five dollars and a half per ton, depending on the oil content, was paid for the leaves and twigs.

A firm at Grants Pass, Oregon, has patents covering methods and apparatus for utilizing western yellow pine needles in the production of fibre after the oil is removed by distillation. Their plant consists of wooden tanks with steam connections with a daily capacity of 2000 pounds of raw material from which ten pounds of oil are obtained and, by suitable treatment, the spent needles produce a long tough fibre that can be woven into fabric or mixed with hair and made into mattresses.

The distillation process is very simple. Steam is passed through the needles, usually at atmospheric pressure. The oil volatilizes and the mixed vapors pass into a cooling apparatus where condensation takes place, leaving a layer of oil and a layer of water. Distillation by steam under pressure is more rapid and

produces more oil. Cutting the needles in small pieces before treatment increases the oil production. Young trees yield most. Trees growing in the open contain more oil than those in a dense stand. The winter and spring months are best for oil content.

THE CONSUMPTION OF DRUGS.

During the past year a number of statements have been published concerning the sale of drugs. Many writers have contended that not more than twenty or thirty per cent. of all drugs and medicines consumed are sold by pharmacists. It is also stated on good authority that over fifty per cent. of the medicines consumed are sold by retail stores other than drug stores, or by peddlers and medicine venders. State laws require that pharmacists be especially trained to qualify to sell drugs and this should be sufficient evidence that the sale of drugs is supposed to be in their hands.

In a recent article on drug intoxication, by Wilbert, it was pointed out that the consumption of drugs in the United States has increased out of all proportion to the increase in population. In the same paper attention was called to the fact that drugs are consumed in quantities far in excess of real needs. For example, the amount of quinine imported into the United States in 1913 amounted to 2,065,000,000 average doses, enough to provide every man, woman and child with from twenty-five to thirty doses each year. About one million pounds of Aloes were imported the same year and more than two and a half million pounds of Senna Leaves.

That a large number of American people have the habit of taking medicine whether they need it or not is a well known fact to those who have studied the consumption of drugs. One of the greatest factors which has encouraged self-medication during recent years is the stocking of homes

by venders and peddlers of medicinal compounds. These sellers have been able to largely increase the sale of their wares by making a practice of leaving goods and calling later to collect for what may have been used. The continual taking of small amounts of drugs which are ordinarily considered harmless, has in many cases been followed by disastrous results.

It has come to our attention a number of times that pharmacists not infrequently advise customers not to take certain medicines. We believe that pharmacists as a rule have the welfare of the public in mind when selling medicinal preparations, but we have never heard of a medicine peddler or vendor giving advice which would tend to influence prospective customers against their wares. Peddlers seldom possess a knowledge of the injurious results which may follow the continual use of even small quantities of many commonly used drugs and preparations. Their proposition is purely a commercial one. The habitual use of many of the so-called household remedies is claimed by good authority as increasing the mortality rate from degenerate diseases.

Many consider the medicine peddler a menace to the public health in that he is continually urging people to purchase and use the preparations which he has to sell, some of which, to say the least do not aid in the conservation of life. The sooner the public comes to realize the importance of restricting the sale of drugs and medicine to those who are required by law to possess a knowledge of their character, the better it will be for all concerned.

LOOKING BACKWARD.

"There's no danger," said the doctor. "It's only a carbuncle coming on the back of your neck. But you must keep your eye on it!"—Christian Register.

TIMELY TOPICS

By H. M. WHELPLEY, St. Louis.

The Trading Stamp Nuisance.—This subject came in for a good share of the discussion at the 1915 meeting of the Mo. Ph. A. The volume of proceedings for that year contains useful information on the subject. Since our last convention, the United States Supreme Court has upheld the laws of the states of Washington and Florida which impose heavy taxes on trading stamps. In fact, the state of Washington makes it a gross misdemeanor to distribute trading stamps redeemable in merchandise. These laws should be more than a mere hint for the Committee on Legislation of the Mo. Ph. A.

Itinerant Venders constitute a form of competition which the retail drug trade, the country over, resents. Iowa has a law which apparently prohibits itinerant venders from selling preparations containing alcohol or poison. The Attorney General says, "The law will hold good." If this form of legislation is effective, it will doubtless be copied in other states. In Missouri, it will first be necessary to convince the legislature that itinerant venders are inimical to public interests. The law-makers are very careful to see that pharmacists who are established in business in a permanent location are fully competent to dispense drugs. They look on the itinerant vender from another angle because he delivers only package goods and he claims the responsibility for quality and action rests with the manufacturer.

Digest of Comments on the U. S. P. and N. F.—The Hygienic Laboratory of the United States Public Health Service, under date of February, 1916, issued Bulletin No. 105, which is the tenth in the series of comments on the Pharmacopoeia and the National Formulary. This volume of 516 pages can be obtained at a cost of fifty cents by addressing the Superintendent of Documents, Government

Printing Office, Washington, D. C. No one should attempt writing on the subject of Pharmacopoeial or National Formulary preparations without consulting these digests and seeing just what other persons have previously said on the same subject.

The Harrison Anti-Narcotic Law.—Missouri pharmacists have escaped many of the unfortunate entanglements with this law that have caused pharmacists trouble and expense in some sections of the country. This anti-narcotic act is the work of pharmacists and in principle has their support. Pharmacists have not hesitated in cutting down their sales of these goods and adding to their work in order to curtail the harmful use of narcotics. The Harrison Anti-Narcotic Law is only in name and execution an internal revenue act. Recent rulings of the commissioner and certain activities of the department indicate trouble ahead if not at hand for the well-meaning dealers in narcotic drugs. It is timely to keep posted and safeguard every detail of routine in handling narcotics. I fear that only then the nimble-witted will escape unjust Federal censure.

U. S. P. IX.—The new revision of the Pharmacopoeia is in press and will soon be on the market. It becomes official September 1, 1916. It is a matter of preparedness to order the book now. I suggest the buckram binding, which is more durable than muslin and only twenty-five cents more expensive. I am pleased to show you page proofs of a number of the U. S. P. IX plates.

N. F. VI.—You may have gotten along without a copy of the National Formulary but the time has now arrived when it will be dangerous to try running a pharmacy without a copy of this standard, under the Food and Drugs Act. The new revision will be off the press as soon as the U. S. P.

IX is ready and is to be the law and guide from September 1, 1916. The buckram binding will cost \$2.75 per copy. I exhibit page proofs of the plates from which the National Formulary is being printed.

The A. Ph. A. Receipt Book.—The American Pharmaceutical Association has largely dictated the United States Pharmacopoeia since 1870 and is the author and publisher of the National Formulary. The receipt book, now in preparation by the A. Ph. A., will supplement the U. S. P. and N. F. as

working manuals. The proposed formulas are being published in the A. Ph. A. Journal and other pharmaceutical periodicals. I urge Missouri pharmacists to assist in testing them out. The chairman of the committee having the work in charge is Professor Otto Raubenheimer, of 1341 Fulton St., Brooklyn, N. Y. He invites correspondence on the subject.

Read at the Missouri Pharmaceutical Association meeting at Excelsior Springs, June 13, 1916.

THYMOL FROM HORSEMINT

Government Specialists Find Commercial Possibilities in Development of New Industry.

That the commercial production in this country of thymol from horsemint may be, under favorable circumstances, a profitable undertaking is indicated by the recent investigations of the U. S. Department of Agriculture, the results of which are published in Bulletin 372. Thymol is extensively used in medicine and forms the basis of a number of important pharmaceutical compounds. In the past it has been imported from northern Europe where it is manufactured from ajowan seed grown in northern India. Now that the European war has reduced these importations from over 18,000 pounds in 1914 to a little more than 2,000 in 1915, it is believed that to some extent the demand can be supplied at home. For several years the Department of Agriculture has been conducting experiments with horsemint which occurs as a common weed in many localities. These experiments have resulted in improving the plants by selection to a point which it is said warrants the use of horsemint for the commercial production of thymol.

Horsemint is found wild on light

sandy soils over the entire region from southern New York to Florida and westward to Wisconsin, Kansas and Texas. It is probable that it will thrive under cultivation wherever it is found growing wild, but local economic conditions must be considered in determining whether or not its production would be profitable. The investigations of the Department of Agriculture indicate that by distilling the improved plants an average of 20 pounds of oil per acre may be obtained from first-year plantings, and that in succeeding years the yields should be at least 30 pounds per acre. The phenol content of this oil may be assumed to be about 70 per cent. almost all of which is thymol. The yield of thymol per acre of horsemint, therefore, should be for the first year a little less than 13 pounds, and for succeeding years a little less than 20 pounds. As the average price of thymol for a number of years has been about \$2 a pound, the gross returns per acre from a horsemint plantation are estimated in the bulletin already mentioned, at about \$25.72 for the first year, and \$38.58 for each succeeding year.

It is more difficult to estimate with accuracy the cost of producing the thymol. In the opinion of the investigators it is doubtful whether the profits from the industry will be sufficient to warrant anyone in engaging in it unless the horsemint is grown in connection with other oil-yielding plants for which a distilling apparatus is required. In that event, of course, the entire cost of the distilling plant can not be charged against the thymol industry alone. For this reason in the estimates of cost of production published in Bulletin 372 such items as land rent, taxes, depreciation, upkeep, and interest on the distilling plant have not been included. Excluding these items it is believed that thymol can be produced at an approximate cost of \$23 per acre the first year, and \$19 per acre thereafter. This figure includes the growing of the plants, fertilizer, cultivation, harvesting, and distilling. A plantation of horsemint will not have to be replanted oftener than once in five years, and under average conditions may continue to give a good yield for a still longer time. After the first year a material reduction can be made in the cost of fertilizer if the distilled herb is returned to the soil. These facts account for the reduction in the cost of production after the first year.

Horsemint seed matures in the Southeastern States during August and September and is ready to be gathered as soon as the calyx is dry and has assumed a dark-brown color. The entire heads can readily be stripped off by hand. They should be spread out on a cloth or tight floor and thoroughly dried. The seed can then be removed by rubbing through a sieve, common window screening being about the right size. Where the winters are free from severe frost and snow, as in the extreme southeastern States, the best results can be secured by planting the seed about the first of September in a carefully prepared seed bed. About two months

after sowing, when the plants are about two inches high, they are ready for transplanting to the fields. Fuller information in regard to methods of cultivation, harvesting, and distilling are contained in Bulletin 372.

WE SHOULD EAT MORE DRIED FRUITS.

In these days when preparedness and economy are being preached from every side, Professor M. E. Jaffa, consulting nutrition expert of the California State Board of Health, calls attention to the high food value of dried fruits. During the coming winter, the fruits which are now ripening will be of great value in their dried form and should be eaten in much larger quantities.

Dried figs, apples, raisins, apricots, prunes and dates are wholesome foods which build tissue and yield energy. The chief nutritive element in dried fruits generally is sugar, which is the most easily digested and assimilated of all the carbohydrates. Since sugar is one of the most important factors in producing muscular energy for the body, the high nutritive value of dried fruits must be well appreciated. Raisins, prunes and apples are particularly high in sugar, and according to Professor Jaffa, these form an ideal portion of the diet.

The salts and organic acids found in dried fruits also have hygienic and medicinal value and the mineral ingredients are most important. Professor Jaffa says that it matters not whether it was instinct or knowledge that led man to combine nuts and fruit—the result is a happy one.

She—Oh, Charles, it is so cold! I would like to have something around me.

He—What would you care to have?

She—Oh, anything—

And the poor boob brought a shawl.

HOW TO USE THE METRIC SYSTEM.*

By J. W. ENGLAND.

It sounds trite and commonplace to say it, but the way to use the metric system of weights and measures is to **think in terms of the metric system**. Nothing can be more confusing than to use equivalents of the older system of weights and measures, and nothing has done more to handicap the introduction of the metric system than such use. The only right procedure is to **think** in metric units. And when this is done, the system becomes surprisingly simple in operation.

The metric system has come and come to stay in this country and in time it will be the only system used; probably in a much shorter time than many of us realize. The metric system was legalized by Congress in 1866. Its weights are used in our coinage. Metric units are the legal units of electrical measure in the United States. The use of the metric system is obligatory in the medical work of the U. S. Navy and War Departments and U. S. Public Health Service, and in Porto Rico and the Philippine Islands; and it is in universal use by analytical chemists and scientists, generally.

The European War is demoralizing the export trade of foreign countries. The system of weights and measures most largely used in such trade is the metric. To-day is America's golden opportunity, commercially. Never before in the history of the world has any country ever had such commercial possibilities as this country has for foreign trade. The Government is fully alive to the situation and is doing everything it can to induce manufacturers to use the metric

system in the shipment of goods to foreign countries.

Recently, there has been issued an exceedingly practical Senate Document (No. 241), entitled "Report on the use of the Metric System in Export Trade," by S. W. Stratton, Director of the Bureau of Standards, Washington, D. C. If the metric system becomes the accepted system of U. S. manufacturers for export trade, it will be but a short time until it will be used for goods that are not to be exported, because manufacturers will not want to use two standards—one for export and another for home trade.

The forthcoming editions of our official legal standards—the U. S. P. IX and the N. F. IV, both of which will become official as of September 1, 1916, will use **only** the metric system of weights and measures. The U. S. P. VIII uses the metric system only. The N. F. III uses the metric system, but gives **relative** equivalents in the Apothecaries' system, as do, also, many books of reference and text books. The use of **relative** equivalents has led to errors by those who assumed that the equivalents given were proportional and interchangeable with the metric units, and they were not. This procedure has undoubtedly retarded the adoption or even the learning of the metric system by pharmacists in a practical manner, and the Committee on National Formulary has very wisely decided to eliminate this feature in the forthcoming edition of the book.

It would certainly seem that the time has come for the pharmacists of this country to decide to use the metric system in the manufacture of pharmaceutical preparations. There is nothing inherently difficult about this. But there is a right way of doing it and a wrong way. The wrong way is to use equivalents of the older weights and measures, and the right way is to use the metric

* Read before the Annual Meeting of the Penna. Pharmaceutical Association, June, 1916.

weights and measures, and it is along this line that the following suggestions are offered:

In the first place, while the use of equivalents is to be unreservedly condemned, it is essential that the users of the metric system shall have an intelligent conception of the **approximate** equivalents of metric weights and measures in Apothecaries' weights and measures so that they shall clearly understand relative values; however, this is very different from using the equivalents themselves.

The following table will serve for the purpose of comparison:

Approximate Weights

- 1 milligramme=1/65th grain.
- 1 centigramme=1/6th grain.
- 1 decigramme=1 1/2 grains.
- 1 gramme=15 grains.

Approximate Volumes

- 1 milliliter or mil (or C.c.)=15 grains.
- 1 liter=2.1 pints or 34 fluid ounces.

The term mil will be used in the U. S. P. IX in place of the C.c. or cubic centimeter of the U. S. P. VIII, the Bureau of Standards of Washington, D C., having found that there was an error in the original measurement of the C.c. The error is practically negligible, * but the Committee on Revision wished to be as exact as is humanly possible, and also wished to follow the example of the British Pharmacopoeia in the use of the term. Hence the adoption of the newer and more euphonious term—mil.

Approximate Lengths

- 1 millimeter=1/25th inch.
- 1 centimeter=4/10 inch.
- 1 decimeter=4 inches.
- 1 meter=40 inches.

The figures given are not exact equivalents, but they are sufficiently

exact for understanding relative values. The exact metric equivalents carried out to the ultimate decimal point can be found in Part II of U. S. P. IX.

An excellent conception of the relative values of metric weights and volumes by comparison with the Apothecaries' weights and volumes may be had by studying the doses given in the U. S. P. IX and N. F. IV.

Domestic Volumes

- 4 mils=1 teaspoonful.
- 8 mils=1 dessertspoonful.
- 15 mils=1 tablespoonful.

It is useful to remember, also, that practically, there are 28 (28.3495) grammes in 1 avoirdupois ounce, and 30 (29.573) mils in 1 fluid ounce.

In using the metric system for manufacturing the preparations of the U. S. P. IX and N. F. IV, the terms used should be few in number and simply expressed. The metric system is a decimal system and its terms should be expressed in whole numbers and decimals, as is done by the official standards.

Thus: 1.5 Gm. is expressed as one and five-tenth grammes, not as one gramme and five decigrammes; or 2.5 mils are two and five-tenth mils.

In analytical chemical work and in the expressage of dosage, the same rule is followed in writing, but in speaking, where the quantities are less than one gramme, it is usual to express them in milligrammes, and if less than one mil, in tenths of a mil.

The growth of the metric system in this country, so far as pharmaceutical manufacturing is concerned, has been handicapped by reason of the fact that drugs are bought and sold by the older system of weights and measures, and to use the metric system results in the production of unusual volumes. Thus, 1000 mils equals 33.8 fluid ounces or practically 34 fluid ounces. The quantity of a fluid preparation usually made in a drug store is 32 fluid ounces or less, and

* According to the Bureau of Standards, U. S. Government (Circular 47, Bureau of Standards, Department of Commerce, page 12), the term "cubic centimeter" as used in chemical work is a misnomer, since the unit actually used is the "milliliter" which has a slightly larger volume. The difference is the 27-millionths (0.000027) of a C.c.

bottles holding this quantity are used for stock. But this difficulty can be readily bridged by using only 95 per cent. of the quantities of the official formulas and making 950 mils ($32\frac{1}{8}$ fluid ounces) instead of 1000 mils; or better still, by using metric round bottom packer bottles, which can be readily obtained of glassware manufacturers in the following sizes: 60, 125, 250, 500 and 1000 mils or C.c.; these cost no more than bottles of corresponding volumes in the older system.

Pharmacists should use metric weights and measures for the making of pharmaceutical preparations, whether physicians use the metric system in the writing of prescriptions or not.

The responsibility for the use or non-use of the metric system in the writing of prescriptions rests entirely with the medical profession, not with the pharmaceutical.

In this country, drug stores generally use two sets of weights, i. e., one the Apothecaries' set for prescription purposes, of grains, scruples, drachms and ounces, and another or Avoirdupois set of ounces, pounds, etc., for general use. For the measurement of volumes, there are generally used graduated glass measures of various sizes—60 minims and 120 minims, and 1, 2, 4, 8, 16 and 32 fluid ounces, with pints, quarts and gallon measures of metal.

Every drug store should have a set of metric weights from 1 centigramme to 50 grammes for prescription use, and if they do manufacturing, a set from 1 gramme to 500 grammes, or better, 1 kilo to 5 kilos. For volumetric work they should have metric graduated glass measures of 30 mils, 60 mils, 120 mils, 250 mils, 500 mils and 1000 mils; and a few glass pipettes such as 1, 5, 10 and 25 mils, in fact these latter are indispensable in applying the official tests. The 10 mil pipette and smaller should be graduated into one-tenth mils.

If graduated glass measures and pipettes in mils cannot be obtained those graduated in cubic centimeters can be used in their places, as the difference between the cubic centimeters and the mil or milliliter is practically negligible.

The total cost of a metric outfit of weights and measures as above suggested is about \$5.00.

Horace Greeley once said that the way for the Government to resume specie payment was to resume, and similarly, the way for the pharmacists of this country to use the metric system is to use it.

The U. S. Pharmacopoeial Convention and the American Pharmaceutical Association have kept step with advanced scientific progress by recognizing the superiority of the metric system over the older system—the former for the Pharmacopoeia and the latter for the National Formulary, and I know that I voice the desire of these bodies when I express the earnest wish that the pharmacists of this country will, with the advent of the new edition of these works, use the metric system in the making of official preparations and not depend upon the makeshift of equivalents.

The metric system of weights and measures is rapidly becoming the world's universal standard. Its use is now obligatory in 34 countries and optional in 11 countries and the United States of America cannot afford to take second place to any country.

At the opening of the present session of Congress, Representative Charles H. Dillon, of South Dakota, introduced a bill making the metric system permissive until July 1920, after which time it is to be compulsory and exclusive. Ordinarily such a bill would be fated for the pigeon hole, but this bill is being aggressively supported by Secretary of Commerce Redfield—who is himself a manufacturer of large experience in export trade and a firm believer in the metric system. Hence, the pros-

pects for the adoption of the bill in the near future seem bright.

As Judson C. Welliver writes (Munsey, April 1916): "It is now becoming apparent for the first time that the change (to the metric system) cannot long be postponed, and that it is going to be highly beneficial to business and science, and to technical and popular interests. It is probable that Great Britain will not be far behind us in adopting the French (metric) units. British manufacturers have had to use French measurements in many new operations since the War has drawn the countries closer together than ever before, and even English conservatism will not stand out forever against a good system that is also a universal system."

THE NEW NATIONAL FORMULARY.

The Committee on Publication of the American Pharmaceutical Association makes the following announcement:

The National Formulary, Fourth Edition, (N. F. IV), will be ready for distribution about July 1, 1916.

The prices of the book in the various bindings will be as follows:

Muslin, plain.....	\$2.50
Buckram, plain.....	2.75
Buckram, interleaved.....	4.00

The purchase of the buckram binding is recommended, in preference to the muslin binding, as it is much more durable and suitable for a book of the size and weight and constant use to which this book will be subjected; and the additional cost is but 25 cents per copy.

The book has been completely revised and enlarged. It contains formulas for 589 preparations in Part 1, and in Part 2, definitions and tests for 188 ingredients used in the formulas, but not standardized in the U. S. P. IX. The titles of articles total 777.

The N. F. IV is a legal standard under the Federal Food and Drugs Act and various State food and drug acts and is indispensable to every practicing physician and pharmacist.

The Midland Publishing Company, Columbus, Ohio, has been appointed general sales agent with the following sub-agents:

The Baker-Taylor Company, New York City.

The Chicago Medical Book Company, Chicago.

L. S. Mathews Company, St. Louis, Mo.

The Pacific Drug Review, San Francisco and Portland.

Single copies will be forwarded postpaid on receipt of the price by any of the agents.

J. W. England, Chairman of Committee on Publication, Philadelphia, Pa.

NORTHWESTERN UNIVERSITY SCHOOL OF PHARMACY.

Professor M. A. Miner is making a trip through the West. He expects to visit many cities and to have the opportunity of seeing a large number of Northwestern Alumni. He left Chicago June 15th and will visit Denver, Colorado Springs, Salt Lake City, Los Angeles, San Francisco, Sacramento, Seattle and Minneapolis, spending from two to five days in each city. While in Seattle he will be the guest of Paul Norton, Class of 1899. Arrangements have been made for a number of alumni groups to greet him.

Her Plan.

Mrs. Youngwed—"Well, dear, I've found a flat, and the cars go right past the door."

Youngwed—"Won't the noise of the electrics disturb your rest, my love?"

Mrs. Youngwed—"Oh, the landlord assured me that I wouldn't mind it after the first two nights, and you know, dear, we can sleep the first two nights at mother's."—People's Home Journal.

History of the California College of Pharmacy

By JAMES G. STEELE.

At different quarterly meetings throughout the year papers were read as follows: "White Pine Canadeusis," by S. A. McDonnell; on "Syrup Superphosphate of Iron and Aitkens' Syrup," by Emlen Painter; "Berberis aguifoliam," by E. W. Runyon; "Syrup of Ipecac," by P. L. Vreeland; on "dilute Phosphoric Acid," by E. A. Schreck; "Repercolation," by A. L. Lengfeld; "Compound Syrup of the Hyposphasphites," by P. L. Vreeland; on "Ethyle Iodide," by A. L. Lenfeld and "Syrupus Ferri Iodide," by E. W. Runyon.

The officers for 1881 were: President, Emlen Painter; First Vice-President, S. A. McDonnell; Second Vice-President, John H. Damson; Secretary, E. A. Schreck; Treasurer, Wm. J. Bryan; Directors: W. J. Bryan, John Calvert, F. C. Keil, E. A. Schreck, A. L. Lengfeld, S. A. McDonnell and Emlen Painter; Faculty: Materia Medica, Wm. M. Searby; Botany, Dr. H. N. Behr; Pharmacy, E. W. Runyon; Chemistry, Wm. T. Wenzell; Dean, Emlen Painter; Editor, Wm. M. Searby.

The graduating class of 1881 were: Wm. N. Adair, J. J. D. Argenti, Geo. R. Chard, Nelson A. Cody, James M. De Witt, Chas. P. Elwert, J. P. Ferrier, David Fletcher, D. M. Gove, Chas. M. Wammitt, W. F. N. Hurtzig, D. D. Lustig, M. J. Murphy, A. L. Scholl, Chas. M. Troppman—fifteen in all.

The thirteenth annual meeting of the College and Society were held on January the 12th, 1882. The following were elected officers for the ensuing year: President, Emlen Painter; First Vice-President, Wm. M. Searby; Second Vice-President, James Topley; Secretary, Fred Grazer; Treasurer, Wm. J. Bryan; Librarian and Curator, P. L. Vreeland; Editor, Wm. M. Searby; Board of Trustees: John Calvert, J. H. Damson, Fred Grazer, F. C. Keil, D. W. Kirkland, L. A. McDonnell, Emlen Painter.

Graduates for 1884—Henry A. Ball, Josephine E. Barbat, Wm. H. Dick, F. L. Krause, A. L. Leber, Dr. C. G. Levison, Geo. M. Loehr, T. S. Newby, Geo. Oberdeener, N. F. Prien, A. D. Welsh, Wm. B. Whitney.

1885 Directors—J. Calvert, T. C. Keil, W. M. Searby, J. H. Dawson, F. A. Grazier, P. Rossi, Val. Schmidt.

In the report of President Searby occurs the following: "I am pleased to be able to state that the year which has just closed has been one of satisfactory progress to both Society and College.

"Now that we have so many country members, it becomes more than ever a question how their presence at our pharmaceutical meetings can be secured. As compared with eastern organizations, the attendance at our meetings is good, but it is still almost entirely confined to those living in and around the city. The benefits of the society are enjoyed much more largely by those who attend the meetings, because at all of them many valuable practical suggestions are made which do not appear in print.

"The condition of the college is hopeful. This year has witnessed the full inauguration of the long contemplated feature of a preliminary examination. It required some courage on the part of the trustees to announce to all would-be students that they must at least have mastered the elements of a common school education before they could enter the college.

"Experience has taught us that those who stand very low in this respect fail to reap the advantages for which they pay. They are not able to receive, except to a limited extent, the instructions of the professors. This being the case, it is only an act of justice to decline to receive their money until by further schooling and mental training they have opened wider the channels of communication

between themselves and their teachers, whereby the instructions of the latter may be apprehended by the understanding and retained in the memory."

From the report of the Board of Trustees it appeared that the number of students in attendance at the college were 49, in the junior class 24 and in the senior class 25.

Graduates for 1886—Geo. T. Beasley, Wm. J. Davis, R. C. Dorrance, Paul T. Harman, A. W. Meyer, O. J. Mayer, Wm. J. Patton, W. F. Prien, E. C. Reilly, N. W. Skilling, G. L. Turner, Jas. M. Topley—14 in all.

The thirteenth annual meeting of the Society and College was held in the college building, 113 Fulton street, November 11, 1887. Reports were read by the various officers and accepted. From the report of the Board of Trustees it was learned that considerable money had been spent in fitting the laboratory and lecture rooms. Several additions to appliances were made during the past year besides a number of valuable materia medica specimens. Among the recent acquisitions were an oxy-hydrogen lantern, many new individuals of apparatus in physics and chemistry and a number of charts for use in the different departments of study.

Gradautes for 1887—Dr. T. P. Bodkin, John M. Carragh, Henry W. Crew, F. A. Driscoll, Henry Haman, J. C. Ing, Jr., Dr. M. H. Logan, Dr. J. R. McMurdo, W. S. Nichols, A. M. Orena, P. J. Perkins, C. A. Seifert, J. S. Warren, Dr. H. Wulzen, Jr.

The following officers were elected for the ensuing year: President, F. C. Keil; first vice-president, Dr. H. H. Behr; second vice-president, Wm. T. Wenzell; secretary, C. M. Troppmann; treasurer, Henry Michaels; librarian, Miss Josephine E. Barbat; trustees, J. J. B. Argenti, J. E. Barbat, John Calvert, J. H. Dawson, E. Happersberger, Wm. M. Searby and C. M. Troppmann.

The faculty were: Wm. T. Wenzell, Chemistry; F. C. Grazier, Materia Medica; Dr. H. H. Behr, Botany; E. W. Runyon, Pharmacy.

In the "announcement" it was noted that "fees" were as follows: Matriculation, \$2.50; the year's lectures \$100; certificate of proficiency, \$2; latin (optional), \$5; junior quiz class (optional), \$5; senior quiz class (optional), \$6.

The fifteenth annual session of the college commenced April 2, 1888. Including the names for the last year (1887), there were 123 young gentlemen who had acquired the honor of "Graduate in Pharmacy" since the inception of the college in 1872. The titles of the various "theses" presented by the candidates for graduation showed a wide range of subjects. Over 25 were on various California medicinal plants. The different preparations, proximate compounds and metallic salts made by the students were given to the college and placed in the museum. The Alumni Association numbered 68. They elected their own officers and held stated meetings. From 1885 to 1889 no record of annual meetings has been preserved.

Officers for 1888—F. C. Keil, president; Dr. Behr, first vice-president; W. T. Wenzell, second vice-president; C. Troppmann, secretary; Henry Michaels, treasurer; J. J. B. Argenti, F. H. Barbat, J. Calvert D. M. Fletcher, E. Happersberger, Wm. M. Searby and Chas. Troppmann, trustees.

The twentieth annual meeting of the Society and College was held on the evening of November 10, 1889, at the college building, 113 Fulton street. Reports from the various officers were read and approved. The annual election was then held and the following were elected to serve for the ensuing year: President, Dr. S. H. Melvin; first vice-president, F. E. Ray; second vice-president, S. A. McDonnell; secretary, F. A. Beckett; treasurer,

Henry Michaels; librarian, J. H. Barbat; trustees, J. J. B. Argenti, John Calvert, J. N. Damson, Valentine Schmidt, F. C. Keil and Fred A. Grazier.

On the last page of the "announcement" was printed a fine cut of the front of the college building and pictures of the various rooms inside were also printed.

The Junior students submitted to a modified examination. From the announcement we take the following: "Junior examination, a student having attended one full course of lectures in the Junior class, may at the end of this course, select of the parts into which the Junior examination is divided (Botany, Pharmacy, Chemistry, Latin, Materia Medica, "Committee") any number, not less than two, in which he may desire to be examined, notice of said selection to be given in writing to the Dean of the Faculty on or before September the first. If he pass in all the branches selected by him, the result will be placed to his credit, and at the close of the following term, he may present himself for examination in the remaining branches, and if he pass also in these, he will be entitled to enter into the Senior Class. But no student will be allowed to enter the Senior Class in any branch until he shall have passed in all the branches of the Junior Class."

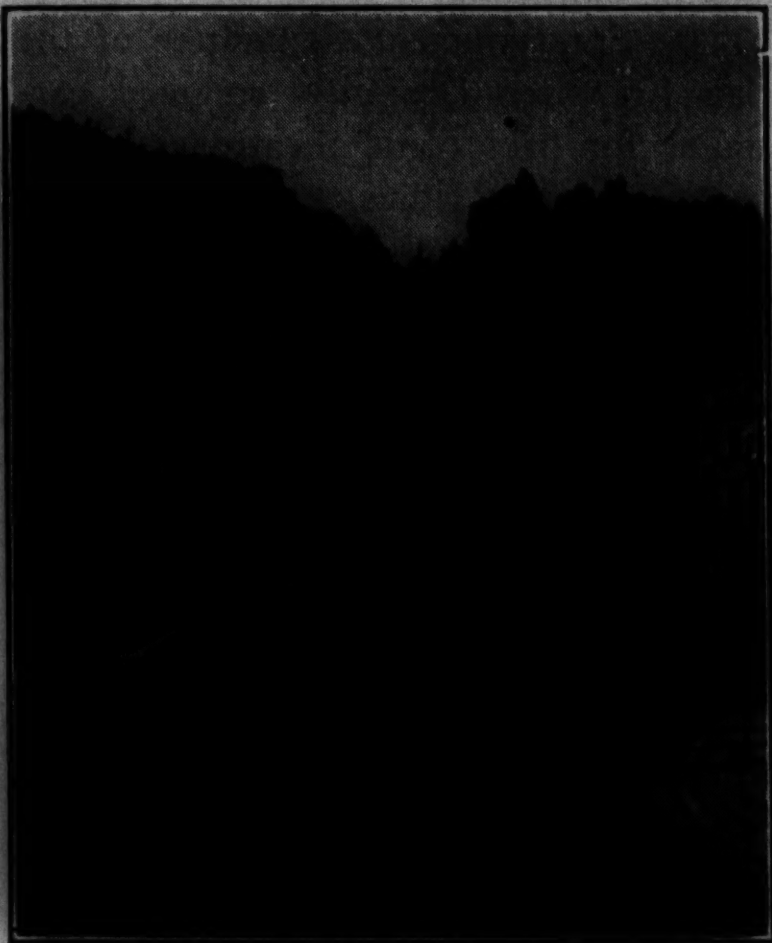
"Senior Examination. The Senior Class will be examined at the end of the session for the Degree of Graduate in Pharmacy in Organic and Inorganic Chemistry, Toxicology, Systematic Botany, Materia Medica, Chemical and Microscopic Characters of Drugs, their doses and uses, Theoretical and Practical Pharmacy, and the translation of recipes from Latin into English and from English into Latin. The practical examination will include the actual compounding of prescriptions and the manipulation of drugs and chemicals in the presence of the examiners."

The "announcement" this year gave full particulars of requirements on the part of students, courses of study, apparatus required, time tables for lec-

tures, courses taken by the different professors, text books, etc.

The 17th annual session of the college commenced April 1, 1889.

The Faculty were: Horas Davis, President University of California; Wm.



T. Wenzell, Chemistry; Dr. H. N. Behr, Botany; Wm. M. Searby, Materia Medica; E. W. Runyon, Pharmacy and Dean of the Faculty.

Assistants: Frank T. Green, Chemistry; N. E. Besthorn, Pharmacy; J. J. B. Argenti, Materia Medica; Miss Josephine E. Barbat, Botany; W. C. Gregory, Instructor in Latin.

The thirty-seventh annual meeting of the American Pharmaceutical Association was held in San Francisco, June 24 to 29, 1889. The sessions were held in the Odd Fellows' Building, corner of Seventh and Market Streets.

Many Eastern gentlemen who had been prominent in the affairs of the association came out and made the acquaintance of their Western confreres. Among them were President Alexander of St. Louis, Mr. John M. Maisch of Philadelphia, Mr. Whitmore of Lowell, Mass., Mr. Ebert of Chicago, Dr. Whelpley of St. Louis, L. W. D. Sheppard of Boston, Mass., Emlen Painter of New York, formerly of San Francisco, and many others.

Many interesting and valuable papers were presented and the various sections

were exceedingly well attended. At the election, Emlen Painter of San Francisco, was made the president for the ensuing year. This was considered quite an honor for Mr. Painter and a well-deserved compliment, both to him and to California.

The Entertainment Committee of the San Francisco Druggists supplied carriages for drives and theatre and card parties for the ladies, smokers for the gentlemen, banquets for ladies and gentlemen, winding up with a week-end trip on the bay on the steamer "J. M. Donahue," when a band was provided and lunch tables set for all. Many old friendships were renewed, new ones made, and all parted with mutual felicitations. The entertainment committee reported afterwards that there had been collected \$3,154.90 and disbursed \$2,983.89, leaving a balance in hand of \$221.19, which amount was subsequently donated to the Library Fund of the California College of Pharmacy. The twentieth annual meeting of the Society and College was held at 113 Fulton Street on the evening of November 14, 1889. From the Secretary's report there were shown to be 189 members of the Society and College.

STRICT COMPLIANCE.

A somewhat eccentric colonel was seized with a sudden ardor about hygiene, and one morning peremptorily ordered that all the men in his regiment should change their shirts. The order was duly carried out, except in the case of one company, where the privates' wardrobes had been pitifully depleted. But the company sergeant, who knew the state of affairs, rose to the occasion. "Orders must be obeyed!" said he. "Let the men change shirts with one another."

Don't use an open light when looking for escaping gas or in the presence of inflammable liquids.

Don't use sawdust in spittoons or to absorb oils.

WOOD WASTE USED FOR PULP

The use of a steadily increasing amount of wood waste in the manufacture of pulp is indicated by figures compiled by the Forest Service. Although the pulp industry showed a decline in the last year for which complete figures are available (1914) on account of the increasing cost of raw material and general business conditions, more wood waste was used than in any previous year.

Approximately 330,000 cords of waste with a value of \$1,400,000 were utilized by 35 of the 200 pulp and paper mills of the United States. It is thought that as the price of cordwood goes up the amount of wood waste used will become greater.

The Canadian pulp industry has, it is stated, had a vigorous growth during the last few years and the greater portion of its products is marketed in the United States. An average cost of about \$6.50 per cord, as compared with the \$10 to \$16 per cord which many manufacturers in this country are paying for pulpwood, is the reason given for the growth.

It is pointed out that the development of the supplies of spruce, and white and red fir in the National Forests of the West and in Alaska, together with the abundance of cheap water power, will eventually attract the paper industry to locate in those regions. Suitable pulp timber can be delivered to desirable mill sites for the next twenty to forty years at prices of about \$2.50 to \$4 per cord, say experts of the Forest Service. It is thought that the low price of material and power will more than offset the higher freight rates on the product to the eastern markets.

Don't use insecticides or liquid polishes in the vicinity of open flame lights. Many such compounds contain volatile inflammable oils.

Don't let the fact that you are insured make you careless.

WOOD DISTILLATION.

Washington, D. C., June 20, 1916.—A summary of the general results of the 1914 census of manufactures for the wood-distillation industry has been issued by Director Sam. L. Rogers, of the Bureau of the Census, Department of Commerce. It consists of a statement of the quantities and values of the various products manufactured, prepared under the direction of Mr. William M. Steuart, chief statistician for manufactures. The figures are preliminary and are subject to such change and correction as may become necessary upon further examination of the original reports.

Number and Output of Establishments Reporting.

Returns were received from 101 establishments engaged in the industry in 1914, whose total output during that year was valued at \$10,236,332. For 1909 there were reported 136 establishments, with a total output valued at \$10,215,901. The number of establishments thus decreased by 35 during the five-year period, while the value of products increased by two-tenths of 1 per cent. The reduction in number of establishments, however, is due in part to a difference between the methods of reporting at the two censuses. For 1909 separate reports were made in some cases for plants for which the 1914 data were combined in a single report.

The production in 1914 of crude wood alcohol (menthyl alcohol) for sale was 7,196,975 gallons, valued at \$1,605,880, representing an increase of 6.3 per cent. in quantity and a decrease of 9.5 per cent. in value as compared with the 1909 output of 6,772,700 gallons, valued at \$1,774,459.

Of refined wood alcohol, the 1914 production for sale amounted to 6,216,727 gallons, valued at \$2,709,369, representing decreases of 7.7 per cent. in quantity and 12.5 per cent. in value as compared with the 1909 output, 6,732,877 gallons, valued at \$3,096,808.

The total production of crude wood

alcohol in 1914, including that consumed by the maker in the manufacture of refined wood alcohol and other products, was 8,828,911 gallons, as compared with 9,307,583 gallons in 1909; and the total production of refined wood alcohol in 1914, including that consumed by the maker in the manufacture of other products, was 6,446,569 gallons, as compared with 6,732,877 gallons in 1909. In 1914 the consumption of crude wood alcohol in the manufacture of refined wood alcohol and other products was 7,231,877 gallons, including the amount purchased for refining as well as that consumed by the maker.

The production of acetate of lime, chiefly the gray acetate, in 1914 was 164,483,854 pounds, valued at \$2,138,909, representing increases of 16.3 per cent. in quantity and nine-tenths of 1 per cent. in value as compared with the 1909 product, which amounted to 141,478,296 pounds, valued at \$2,118,443.

Of the total number of establishments reported for 1914, 6 were engaged primarily in other industries but manufactured 867,230 gallons of crude and refined wood alcohol, valued at \$211,734, and 11,838,582 pounds of gray acetate of lime, valued at \$142,060, as subsidiary products. At the census of 1909, 16 such establishments reported 869,658 gallons of crude and refined wood alcohol, valued at \$341,680, and 9,336,854 pounds of acetate of lime, valued at \$137,223.

The production of charcoal in 1914 amounted to 39,184,475 bushels, valued at \$2,507,903, representing increases of four-tenths of 1 per cent. in quantity and 6.6 per cent. in value as compared with the 1909 output, 39,017,247 bushels, valued at \$2,351,644.

The industry includes 14 establishments which distilled turpentine from wood in 1914. This class of establishments produced in that year 575,557 gallons of turpentine, valued at \$194,183, representing decreases of 18.6 per cent. in quantity and 22.2 per cent. in

value as compared with the 1909 product, which was 706,868 gallons, valued at \$249,526. This turpentine output, however, constitutes but a very small portion of the entire turpentine product of the country, which amounted to 27,648,939 gallons in 1914 and to 29,695,822 gallons in 1909.

The value of other wood-distillation products (acetone, formaldehyde, acetic acid, wood creosote, rosin, tar, etc.), made in 1914 was \$852,590, which represents an increase of 138.6 per cent. over the value of this class of products in 1909, \$357,290.

PHARMACISTS MAY HAVE TO GROW DRUGS IN BACK YARDS.

One of the problems which is now confronting the pharmacists of the country and which will engage the attention of the members of the Pennsylvania Pharmaceutical Association at the meeting next month in Reading, is the shortage of vegetable drugs which has developed in consequence of the European war.

The shortage of dyestuffs and chemical products, concerning which there has been so much said during the past few months, bids fair to be overcome by the growing manufacture of these chemicals in this country, although the higher cost of labor and materials here will not permit a return to the former prices.

With the vegetable drugs, however, the shortage cannot so easily be made up. About one-half of our crude drugs come from foreign countries. Even such common drugs as dandelion, jimson weed and burdock are imported because of the lower cost of collection abroad due to lower wages.

Some drugs, like asafetida, tragacanth, senna leaves, lycopodium, nuxvomica beans and ipecac, cannot be grown in this country at all on account of the unsuitability of the climate. Many of them come from Asia, Africa and South America, and the present

shortage and high prices are due principally to lack of transportation facilities and the fact that London and Hamburg have hitherto been the great crude drug markets of the world.

With some of the drugs, however, such as Indian hemp, dog grass, German chamomile, belladonna, digitalis, aconite, gentian, licorice, aniseed, fennel and sage, in which the price changes have also been marked, cultivation is possible in this country, and even profitable at the present prices. Ginseng and golden seal have been profitable drug crops in some sections of Pennsylvania and it is not unlikely that some of the drugs named above may also be profitably grown in this State; in fact, it is positively known that we can grow some of these drugs and that under cultivation they will be of much higher potency than those which have heretofore come from abroad. When the war is over, if it lasts several years, as is predicted by some people, we may not only have more and better drugs, but it is not unlikely that New York will be found to have supplanted London, Hamburg and Amsterdam and will be the greatest drug market in the world.

For several years past the Universities of Wisconsin and Minnesota have successfully grown experimental crops of several of these drugs. Some of the large pharmaceutical manufacturing establishments of both the east and the middle west have also conducted successful drug farms, and some individual growers are working in a small way, but it is evident that some kind of concerted effort must be made on a much larger scale if any real benefit is to result.

One hundred years ago, before the present great development of manufactured products, the pharmacist had to rely upon his own efforts for his supply of crude drugs and had to collect many of them himself. The present-day pharmacist no longer has to do this but instead is educated in the use of the microscope by the aid of

which he identifies the drugs, many of them reaching him in the powdered condition.

Pennsylvania already raises large crops of tobacco, which is really a drug. Why should not other drugs be also grown to advantage and profit?

ESSENTIAL OILS.

Census Bureau's Summary Concerning the Industry for 1914.

A summary of the general results of the 1914 census of manufactures for the essential-oil industry has been issued by Director Sam L. Rogers, of the Bureau of the Census, Department of Commerce. It consists of a statement of the qualities and values of the products manufactured, prepared under the direction of Mr. William M. Steuart, chief statistician for manufactures. The figures are preliminary and are subject to such change and correction as may become necessary upon further examination of the original reports.

Number of Establishments and Value of Products.

Returns were received from 108 establishments engaged in the industry in 1914, the total products of which for the year were valued at \$2,565,361. This total comprised essential oils, valued at \$1,289,482; 917,690 gallons of witch-hazel extract, valued at \$575,938; and other products to the value of \$699,941. At the census of 1909 there were reported 74 establishments with products valued at \$1,773,304. Of this amount, \$1,111,805 represented the value of essential oils, \$419,793 the value of 691,823 gallons of witch-hazel extract, and \$241,706 the value of all other products. The value of all products in 1914, therefore, was \$792,057, or 44.7 per cent., more than in 1909. These products do not include synthetic or artificial oils, of which there is a con-

siderable production, notably of synthetic oil of wintergreen. They do include the essential-oil products of two establishments in 1914 and six in 1909, engaged primarily in other branches of manufacture.

Including the by-products and the essential oils distilled for others, the total production in 1914 comprised 363,991 pounds of peppermint, valued at \$601,617; 94,209 pounds of spearmint, valued at \$238,074; 41,178 pounds of black birch, valued at \$67,691; 6,000 pounds of wintergreen, valued at \$24,538; 4,702 pounds of wormwood, valued at \$9,040; and oils of camphor, cedar, cloves, lemon, parsley, patchouli, pennyroyal, sandalwood, sassafras, tansy, etc., to the value of \$348,522. The production of essential oils by all establishments in 1909, comparable with the figures just given, comprised 305,781 pounds of peppermint, valued at \$519,079; 33,400 pounds of spearmint, valued at \$83,283; 67,053 pounds of black birch, valued at \$102,045; 22,281 pounds of wintergreen, valued at \$68,983; 1,989 pounds of wormwood, valued at \$9,514; and other essential oils to the value of \$328,901.

The value of the annual output of essential oils, as a group, increased by 16 per cent. during the 5-year period. The production of peppermint increased 19 per cent. in quantity and 15.9 per cent. in value; that of spearmint increased 182.1 per cent. in quantity and 185.9 per cent. in value; that of black birch decreased 38.6 per cent. in quantity and 33.7 per cent. in value; that of wintergreen decreased 73.1 per cent. in quantity and 64.4 per cent. in value; and that of wormwood and other essential oils increased 5.7 per cent. in value. The output of witch-hazel extract increased 32.6 per cent. in quantity and 37.2 per cent. in value.

Fire losses and cost of fire prevention in the United States amount annually to \$500,000,000.

MANUFACTURE OF TURPENTINE AND ROSIN.

Washington, D. C., May 29, 1916.—A preliminary statement of the general results of the 1914 census of manufactures with reference to the turpentine and rosin industry has been issued by Director Sam L. Rogers, of the Bureau of the Census, Department of Commerce. It consists of a detailed statement of the quantities and values of the spirits of turpentine and the rosin manufactured during 1909 and 1914 in the United States as a whole, prepared under the direction of Mr. William M. Steuart, chief statistician for manufactures. The figures are preliminary and subject to such change and correction as may be necessary from a further examination of the original reports.

Number of Distilleries and Value of Products.

Returns were received from 1,392 turpentine distilleries in operation in 1914. Their total output was valued at \$20,968,684 and consisted of 26,980,981 gallons of spirits of turpentine, valued at \$10,510,407; 2,885,077 barrels of rosin, valued at \$10,332,700; and dross, valued at \$125,577. In addition there were three lumber manufacturing plants which also operated turpentine stills and 14 establishments which distilled turpentine from the wood. These 17 plants produced 667,958 gallons of spirits of turpentine, valued at \$230,800, and 59,852 barrels of rosin, valued at \$242,899. The aggregate production of turpentine for 1914, therefore, was 27,648,939 gallons, and of rosin, 2,944,929 barrels.

At the census of 1909 reports were received from 1,585 distilleries. The total production was valued at \$25,295,017 and comprised 28,988,954 gallons of spirits of turpentine, valued at \$12,654,228; 3,263,857 barrels of rosin, valued at \$12,576,721; and dross to the value of \$64,068.

In addition there were 24 establishments engaged in the manufacture

of turpentine and rosin by the distillation of wood, which produced 706,868 gallons of spirits valued at \$249,526. The figures for the quantity and value of rosin were not reported separately in 1909. The aggregate production of turpentine reported for 1909 was therefore 29,695,822 gallons, and of rosin, 326,385 barrels.

Turpentine and Rosin.

The production of turpentine and rosin during 1914 was thus considerably less than during 1909. The figures for the later year (including the production of the lumber manufacturing and wood distillation plants above mentioned), compared with those for the earlier, show decreases of 16.1 per cent. in total value, 6.9 per cent. in quantity of spirits, 16.8 per cent. in value of spirits, 9.8 per cent. in quantity of rosin, and 15.9 per cent. in value of rosin, and an increase of 96.3 per cent. in value of dross.

The acreage of timber land worked in 1914 was 8,428,088, compared with 8,056,915 in 1909, making an increase of 4.6 per cent.

The returns show a very great increase in the use of the cup system of gathering crude gum. In 1914 the number of crops (of 10,500 cups) worked was 11,813, as compared with only 2,383 in 1909, the percentage of increase being 395.7. On the other hand, the number of crops worked by the boxing system decreased from 17,775 in 1909 to 6,353 in 1914, or 64.3 per cent. The number of crops in back-boxed timber increased from 6,795 in 1909 to 8,314 in 1914, or by 18.3 per cent.

Of the 1,392 establishments reported in 1914, 561 were located in Georgia, 507 in Florida, 160 in Alabama, 61 in Mississippi, 35 each in North and South Carolina, 27 in Louisiana, and 6 in Texas.

If buildings in the United States were as fire-proof as in Europe, the annual cost of fire losses and protection would be only \$90,000,000.

ADVANCE IN DRUGS DUE TO WAR.

The present high prices of drugs and chemicals have never been equaled even in the times of our own Civil War.

The following list shows some of the more remarkable jumps in price, comparing prices of July, 1914, at the time of the outbreak of the European war, with the high point reached since then:

Belladonna, increased 700 per cent., lanolin, 500 per cent., potassium bromide, 1500 per cent.; quinine, 1200 per cent.; sage, 500 per cent.; salol, 800 per cent.; antipyrin, 1000 per cent.; metol, 3000 per cent.; carbolic acid, 1000 per cent.; naphthalene, 500 per cent.; phenacetin, 1800 per cent.; potassium permanganate, 700 per cent.; saccharin, 600 per cent.; salicylic acid, 900 per cent.; thymol, 600 per cent.; hydroquinone, 2000 per cent.

Experts now say if the war continues for another year many drugs and chemicals will be absolutely unobtainable by that time and their places will have to be filled by others possessing identical or similar properties. A few drugs are unobtainable now.

There are many underlying reasons for this state of affairs. All of the vegetable and animal oils have risen enormously because of the fact that glycerin can be made from them and the glycerin then converted into the explosive nitroglycerin or dynamite. This is true especially of cod liver oil, which is being taken by Germany from Norwegian sources of supply. Castor oil comes from a seed principally grown in India, and Great Britain, who controls the trade, has placed an embargo upon the oil, it is said, because it is one of the few oils suitable for lubricating aeroplanes.

The compounds of mercury, among which are calomel, corrosive sublimate, gray powder, blue mass, blue ointment, etc., are scarce because mer-

cury is used in making the compounds known as fulminates, indispensable for the caps used for exploding cartridges and shells.

Quinine still maintains its abnormally high price on account of the high figures obtained at the recent auction sale of cinchona bark, from which quinine is made, held at Amsterdam, the world's center for this drug.

Glycerin is enormously high also on account of its use in the manufacture of nitroglycerin.

Paris green and other insecticides are high in price on account of the scarcity of the crude products from which they are made. Licorice root and stick licorice have risen to unheard-of figures and are still going up, as the Spanish and Italian sources of supply are exhausted and the Russian supply is not available because of the closing of the Dardanelles.

Every time a pharmacist refills an old prescription at its original price, the chances are he is losing money. There is no class of substances in which the rise in price has been so little felt by the consumer and largely equalized by the taking of smaller profits, as in the case of drugs.

GOT DIRECT INFORMATION.

A Louisville attorney and a railroad man went to a theater the other night.

The railroad man saw a flashily dressed, red-faced, sporty-looking individual sitting in one of the boxes.

"Who is that tough person sitting in the box?" the railroad man asked pleasantly. "He looks like a drunken burglar."

"That," said the attorney "is my cousin."

The railroad man gasped a couple of times before he could get a grip on himself. Then a smile spread over his face as he remarked:

"Well, I went straight to headquarters for information, didn't I?"

GOVERNMENT MAKES PAPER FROM NEW WOODS.

That satisfactory wood pulp can be made from a number of heretofore little known woods is evidenced by a Government publication just issued, which contains seventy samples of paper manufactured by different processes, chiefly from woods heretofore practically unused for this purpose.

It is pointed out that the spruce forests of the country are threatened with exhaustion and that the cost of spruce pulpwood has steadily increased. If the price of news print paper is to be kept at a reasonable figure, say the experts, more efficient methods of converting spruce into pulp must be developed or cheaper woods substituted for it.

The bulletin goes on to say that the method of manufacturing groundwood pulp has changed very little since its introduction into this country in 1867. It was with the idea of developing new methods and improving the old that tests were undertaken at the Forest Service laboratories at Wausau and Madison, Wisconsin. As a result the relation of the different steps in the manufacturing process to each other has been definitely established and the merits of each treatment determined. The paper made from new woods was given a practical tryout by two large newspapers with satisfactory results.

The tests showed that eleven new woods give promise of being suitable for the production of news print paper, while a number of others will produce manila paper and boxboards. Most of these woods are confined to the West, while the groundwood industry now obtains the bulk of its raw material from the East. It is thought that pulp-making plants must eventually move to points where they can obtain a plentiful supply of wood and an abundance of cheap water-power, two prime requisites in the business.

Since the National Forests contain immense quantities of the suitable woods and abundant opportunities for

power development, they will undoubtedly play an important part, it is said, in the future of the wood pulp industry. White and red fir are the most promising species in the National Forests in California, although lodge-pole and western yellow pine and Douglas fir may sometimes be used.

COMMENCEMENT AT PHILADELPHIA COLLEGE.

On Sunday, June 4th, 1916, at 4 p. m., the 95th Annual Commencement week of the Philadelphia College of Pharmacy was opened with the Baccalaureate Services conducted by the Rev. David M. Steele in St. Luke's Episcopal Church of Philadelphia. The sermon was one of the most helpful and enjoyable presented to any of the graduating classes for some years.

On Monday, June 5th, the Faculty gave a most delightful banquet to the Graduating Class, Prof. Joseph P. Remington, Dean of the College, acting as toastmaster in a most fitting style. Short addresses were made by members of the Faculty and of the class.

Prof. Samuel P. Sadtler, who has resigned from the Faculty after 38 years of teaching in the College, gave a very interesting address on the duties of the Chemist in relation to our every day living.

Prof. Henry Kreamer brought back memories of the freshman days of the class.

Dr. Clement B. Lowe, the oldest member of the Faculty but one of the ablest, gave some very good advice on "Turn to the right and keep straight on."

Prof. Charles H. Lawall imparted some timely advice on the advantages of associating with your fellow men and not trying to live only for one's self.

Professors Freeman P. Stroup, E. Fullerton Cook, and John A. Roddy, followed with some very entertaining

and useful remarks, and finally the members of the class did their part in a most fitting style.

Tuesday, June 6th, the Alumni Reception was held at the College in the afternoon. After the reception of members by the President of the Association on behalf of the Association, the members of the class gave an interesting one-act comedy.

The Alumni dinner in the evening at the Hotel Adelphi was attended by 300 Alumni, one of the largest gatherings the association has had for some time.

Prof. Joseph P. Remington, Dean of the College, acted as toastmaster. The principal speaker of the evening was Dr. Ross V. Patterson, Dean of the Jefferson Medical College, who spoke very fittingly on the recent amalgamation of the Medical College of Philadelphia, and predicted that this city would in a very short time be the leading medical center of the country.

President Howard B. French, of the Philadelphia College of Pharmacy then gave some very interesting views, on the possibility of Philadelphia also becoming the mecca for all Pharmacy students in the near future.

Mr. Joseph L. Lemberger, Vice-President of the College, and of the Class of 1854, the oldest Alumni member present, gave a very interesting address, and was followed by members from the classes of ones and sixes.

The Commencement exercises of the Class of 1916 were held on Wednesday evening, June 7th, The Rev. Herman S. Cook, delivering the opening prayer.

The address of the evening was delivered by Rev. John G. Wilson, D. D. It was full of good, sound advice to the members of the class as well as an occasional bit of humor. It was a masterpiece in the class of Commencement addresses heard here for some time.

GRADUATING EXERCISES OF NORTHWESTERN UNIVERSITY SCHOOL OF PHARMACY

The Graduating Exercises of Northwestern University School of Pharmacy were held Wednesday, April 19th, in the assembly hall, Northwestern University Building, Chicago. The address to the Graduating Class was delivered by Professor R. H. Gault of the law school of the University. The degree of Graduate in Pharmacy was conferred on:

W. W. Berg, Kewanee, Ill.; F. M. Blake, Kewanee, Ill.; L. E. Bolton, Wyanet, Ill.; G. C. Bunn, Chicago; W. W. Connell, Owatonna, Minn.; W. L. Dickey, Iroquois, S. D.; H. F. Fawkes, Newcastle, Wyo.; K. M. Garver, Mansfield, Ill.; R. M. Hecht, Chicago; J. L. Hoak, Lanark, Ill.; H. J. Hocking, Waupaca, Wis.; C. L. Huffman, Pekin, Ill.; H. H. Humma; Metropolis, Ill.; O. C. Johnson, Terre Haute, Ind.; E. C. Kaplan, Owatonna, Minn.; A. A. Katz, Joliet, Ill.; A. F. Mallatt, Joliet, Ill.; W. D. Morrison, Chicago; B. H. Muncie, Terre Haute, Ind.; S. A. Rice, Sioux City, Iowa; P. W. Rosenberg, Rochelle, Ill.; A. T. Running, Viroqua, Wis.; G. C. Schiefelbein, New Lisbon, Wis.; J. D. Sprecher, Colorado Springs, Colo.; J. E. Sterling, Dixon, Ill.; W. T. Whittington, Marion, Ill.; Margaret E. Wyman, Belvedere, Ill.

Dean John H. Long presented the class and the degrees were conferred by President A. W. Harris.

MORAL TWISTED

The telephone in a physician's office rang madly, says "Current Opinion," and the following conversation took place:

"We want the doctor, quick!"

"Who's sick at your house?"

"Everybody except me. I'd been naughty, so they wouldn't give me any of the nice mushrooms papa picked in the woods."—Ex.

RESULTS OF NATIONAL VOTE ON PREPAREDNESS.

In the referendum recently conducted by the Chamber of Commerce of the United States the vote strongly favored Preparedness. Only the votes of Chambers of Commerce as a whole were considered and the following results were recorded:

	For Ag.
1. For general preparedness..	970 8
2. For a Council of National defense	912 46
3. For a Staff of Industrial Mobilization	925 47
4. For an adequate navy.....	952 10
5. For a General Staff of the Navy	946 19
6. For a regular army with trained reserves such as recommended by the General Staff or Council of National Defense when established...	946 21
7. For universal military training	889 56
8. For prearrangement with private companies for war supplies	940 26
9. For reserve supplies of war material	935 29
10. For additional commissioned and non-commissioned officers of the regular army and a properly trained officers' reserve corps	960 9

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of the Pacific Pharmacist, published monthly at San Francisco, Cal., for April 11, 1916.

State of California,
County of San Francisco.—ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Clyde L. Eddy, who, having been duly sworn according to law, deposes and says that he is the Associate Editor of the Pacific

Pharmacist, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Mrs. F. W. Searby, 1719 Euclid Ave., Berkeley, Cal.

Editor, Clyde L. Eddy, 2028 Carlton St., Berkeley, Cal., and associates.
Managing Editor, None.

Business Manager, F. C. Smith, 504 North Harvey Ave., Oak Park, Ill.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

Mrs. F. W. Searby, 1719 Euclid Ave., Berkeley, Cal.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which

stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is—— (This information is required from daily publications only.)

CLYDE L. EDDY,
Associate Editor.

Sworn to and subscribed before me this 11th day of April, 1916.

(Seal) LAURA JACKSON,
Notary Public.

(My commission expires December 27, 1917.)

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SUGGESTIONS FOR THE FOUNTAIN.

Do not use handkerchief for drying glassware—unless you've got a glass eye.

Use clean linen. Change your shirt at least once a week.

Have your nails cropped and the garbage removed before using your fingers to plant cherries on top of a sundae.

In rolling your cigarette behind the fountain keep the lid on the ice cream packer.

It is not considered genteel fountain etiquette to crack roaches when customers are eating oriental sundaes.

Put corn around the tables to keep the chickens away from the counter so the soda boys won't lose time.

Keep the counter and sideboard well decorated with fly paper. It shows you are too busy at your fountain to swat them.

Never touch the top of glass when serving—you might get your finger cut.
—Snug Seats Catalog.

SURGEON'S PENALTIES.

In the ancient days of Mesopotamia the surgeon did not occupy the exalted position accorded him in the present age, and to discourage him from making rash operations severe penalties were fixed in case of unsuccessful ones. If the patient died the surgeon's hands were cut off. In the case of a slave he had to replace him with one of equal value. If the slave's eye was lost he had to pay half the value of the slave. If a veterinary surgeon were successful he received one-sixth of a shekel, but if the animal died he had to pay one-sixth of its value.

NARCOTIC LAW INFORMATION.

W. H. Chapman, Esq.,
Revenue Agent,
San Francisco, Cal.

Sir:

In reply to an inquiry in a letter received from Revenue Agent McCabe, dated January 26th, regarding the le-

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gality of a physician's private formula containing narcotic drugs, when prescriptions calling for such formula merely mentions a name given by a physician to the mixture, you are advised that such a prescription does not constitute a record which would enable an inspecting officer to determine the disposition made of any particular narcotic drug, and such practice would not be permitted.

A prescription calling for any of the narcotic drugs coming within the scope of the Harrison narcotic law should not only contain the name and address of the patient, the name and address of the physician, and his registry number, but should clearly indicate what narcotic drugs are being prescribed and in what quantities.

Respectfully,

(Signed) DAVID A. GATES,
Acting Commissioner.

Don't make bonfires of rubbish where the wind can scatter it. Burn in a container.—Minneapolis, St. Paul and Duluth Credit Men's Association.

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PHONEY STUFF.

"Hello! Give me Main, one, triple ought."

"I beg your pardon?"

"Didn't you get it? One, zero, zero, zero, Main."

"I don't understand you."

"I want Main, one double nought, nought."

"What?"

"One thousand Main. Ten hundred Main. Now do you get it?"

"O, you mean Main, one, ought, double ought. Why didn't you say so? Line's busy."—Chaparral.

CLASSIFIED.

This Department is free to Druggists, Drug Clerks, Doctors, Dentists, Chemists, Veterinarians and Nurses. Make your wants known and we will do our best to see that you get results.

EXCHANGE—For a good paying Drug Store in a prosperous town, anywhere in California, country preferred, 50 by 140 ft. lot, in fine residential district of San Diego, or 160 acre ranch, uncultivated, with plenty of water, six miles west of Ramona. If interested, write to: W. F. Belcourt, Druggist, Angels Camp, Cal.

WANTED—To hear from owner of good drug store for sale. Send price and full particulars to D. F. Bush, Minneapolis, Minn.

FOR SALE AND EXCHANGE—Drug stores in 48 States. Will also furnish positions and locations for Physicians, Dentists, Pharmacists, Chemists and Veterinarians. Established 1904. Strictly reliable. Best of references. Address, F. V. Kniest, R. P., No. 505 Bee Bldg., Omaha, Neb.

The F. A. Weck Drug Store Exchange, 501 Third avenue, San Francisco, submits the following:

WANTED—A paying drug store in a prosperous town, valued at about \$2,000 cash.

WANTED—A small drug store in growing town on easy terms. Can pay \$500 cash and monthly payments.

WANTED—Drug store by an Eastern gentleman valued at about \$3000, located in the city or one of the bay towns. Business must bear close investigation and be desirable in every particular.

WANTED—A drug store for \$3000 to \$4000 in one of the Bay towns, but Oakland preferred. Store must stand investigation and show value for the price asked.

DRUG STORE for sale, San Francisco, \$2000. Small store, located on a prominent street in the business center, doing a good business. Will stand investigation.

DRUG STORE for sale, San Francisco, \$3700. Good corner on car line. Good family trade, clean stock and low rent. Will stand strict investigation.

DRUG STORE for sale, San Francisco, \$4000. On prominent business corner, Richmond District; modern fixtures, clean stock, doing good business; owner wanting to leave State is the only reason for offering store for sale. This is an exceptionally good offer for any live druggist.

DRUG STORE for sale in San Francisco, \$4000, or at invoice. Located on a good business corner; clean stock and good business. Any one wanting to embark in the drug business in the city should investigate this offer at once.

DRUG STORE for sale, San Jose, \$3000. Good location, clean stock, good business and small expenses.

DRUG STORE for sale in State of Nevada \$5000. In one of the largest mining towns in Nevada; doing a large business; owner has interest in California and anxious to remove to this State.

DRUG STORE for sale, San Francisco, \$4000. Located on one of the principal business streets in San Francisco; fine retail trade; owners have other interests requiring their time and attention.

DRUG STORE for sale in Marin Co., \$6000. First-class, up-to-date store; good business, old established and well organized; located in an ideal home town.

DRUG STORE for sale in Los Angeles, \$6500. Up-to-date store with many specialties, affording good profits. Good reason for wanting to sell.

DRUG STORE for sale, Sacramento, \$8000. Money-making business, well established and good location. Good opportunity for a live man with sufficient capital.

DRUG STORE for sale, San Jose. Old established business. Well located, modern, up-to-date fixtures, clean stock and doing a good business. Owner has other business and will sell at invoice or lump or exchange for real estate.

DRUG STORE for sale in Santa Cruz Co., \$2500. Old established drug store in one of the best towns in California. Good opportunity for active man. Owner wants to retire on account of old age.

DRUG STORE wanted, valued at \$3000 to \$5000, in city or bay town, in exchange for ranch in Fresno or improved property in Alameda. Only a good paying business will be considered.

PHYSICIAN WANTED with about \$1000 to buy a small drug stock and take up practice in a prosperous mining section. The old resident

physician of the place for seven years died recently, leaving the place vacant.

DRUG STORE wanted by a young man valued at \$1000 to \$1500 in a growing town with population over 1000.

DRUG STORE wanted, valued at about \$3000, in exchange for good improved property in Southern Oregon.

DRUG STORE for sale, Idaho, \$6000. Located in a rich stock and dairying country in beautiful valley; only drug store in town and large surrounding country; full prices for everything; big soda trade; owner very much out of health and compelled to give up business; two or three thousand dollars down and balance \$50 per month could be arranged.

DRUG STORE and physician's practice in Monterey Co.; population 640; the only drug store in town, owned by resident physician, who is doing a large country practice; stock, fixtures and building all for \$2500. A splendid field for physician druggist. The doctor would consider an exchange for desirable property in Oakland, Berkeley or Alameda.

DRUGGIST GET RICH in Richmond. We can place you in position if you desire an opportunity.

DRUG STORE in Plumas Co. A prosperous and growing town on line of railroad in rich agricultural and lumber district. Stock and fixtures valued at about \$2000. Would accept \$1000 cash, balance on easy terms. This is an exceptionally good opportunity for a business man.

DRUG STORE in San Francisco, good corner, doing good business. Owner has other business. Price, \$6500.

PAYING DRUG STORE wanted in good country town, value about \$5000. Must stand investigation.

DRUG STORE in Oregon, county seat, population 700. Store and beautiful residence for \$7500. Cash, \$5000 and monthly payments. This is an exceptional good opportunity for an active man, druggist or a physician druggist. Owner's ill health and advanced age reason for selling.

DRUG STORE in San Francisco. Outside district, \$2500.

DRUG STORE in Butte County, good business, low rent and small expense. Price, \$3500.

DRUG STORE, Eureka, Cal. In the center of the city; modern fixtures; doing good business; owner has other interests. Eureka is a fast-growing city of 14,000 population; good business the whole year. Price, \$7,000.

DRUG STORE in Oakland. Thickly settled district; doing \$1,000 per month; low rent; will sell stock and fixtures, valued at \$4,000, for \$3,000 quick cash sale. Good reason for sacrificing a good business.

DRUG STORE in mining city in Nevada. Good for druggist or physician. Population 2,500 and 1,000 adjacent; only one other drug store in the place. Ill health cause for wanting to sell. Price, \$4,000.

NEVADA COUNTY. Store doing large prescription business. Rexall and Eastman's agency. Good all the year business; summer and winter resorts. Price, \$5,500.

BERKELEY. Good clean stock, modern fixtures; small expense; agencies, etc. Price, \$4,000.

PLACER COUNTY. Store carrying large stock; everything up-to-date. Owner has other business and wants to concentrate. Price, \$14,500.

ALAMEDA. Up-to-date fixtures and clean stock; big business; not anxious to sell, but would consider a fair offer.

PHYSICIAN wants to buy an interest in a paying drug store in a country town where he can practice; has \$1,500 cash to invest.

DRUG STORE in Butte County doing large business. Population 1,800—tributary to about 5,000 people; only one other drug store in the town. Last year's sales, \$15,000. Price, \$9,000. Ill health reason for selling.

MARIN COUNTY. Good Bay town, 3,000 population; store new and modern fixtures, but well established, doing good business. Price, \$6,000.

SAN JOSE, CAL. Old established business; modern fixtures and doing good business. Price, \$10,000.

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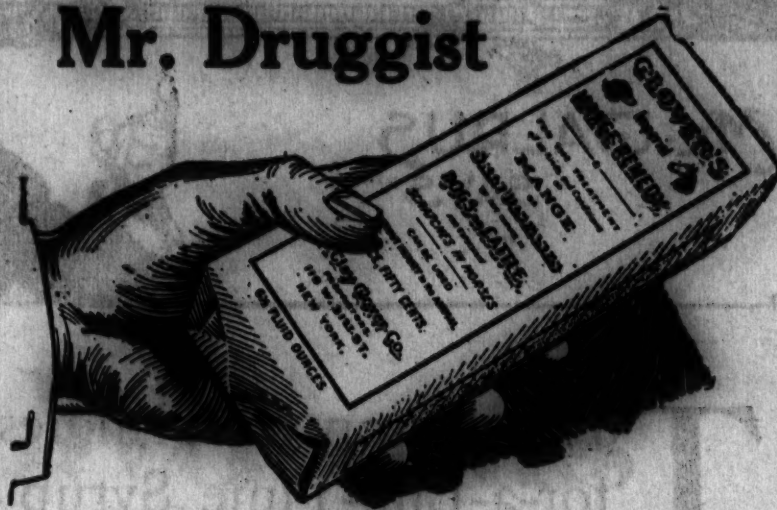
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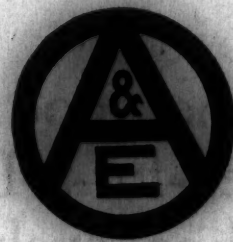
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Immunize 4th of July Wounds with Tetanus Antitoxin

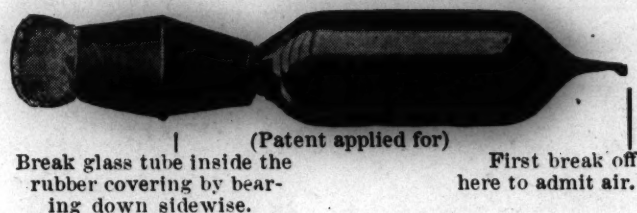
The following rules for the prevention of tetanus are from an editorial in the Journal of the American Medical Association, 1909, page 954 :

- "1. Freely incise every wound.
- "2. Carefully and thoroughly remove from the wound every particle of foreign matter.
- "3. Cauterize the wound thoroughly with Tincture of Iodine.
- "4. Apply a loose wet boric acid pack.
- "5. Inject subcutaneously 1500 units antitetanic serum (Tetanus Antitoxin).
- "6. In no case should the wound be closed ; it should be allowed to heal by granulation. The dressing and packing should be removed every day."

The Mulford Tetanus Antitoxin is Furnished in Improved Glass Syringes and May be Supplied by All Prominent Pharmacists

1500 units (immunizing dose) ; 3000 and 5000 units (therapeutic doses).

Mulford "First Aid" Ampuls Prevent Wound Infections



The Mulford "First Aid" Iodine Ampuls, containing 3 1-2 per cent solution of Iodine, protect wounded or abraded surfaces immediately with this most effective antiseptic.

They are effective and easy to use.

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This means that expert knowledge goes into every batch of root beer extract that we make.

Our **Root Beer Extract** produces root beer that is simply ideal—root beer that tickles the palate; that has life and body; that refreshes and stimulates—root beer that you will be proud to serve; that will help to popularize your soda-counter.

Our **Root Beer Extract** is moderately priced—you can sell the beer at five cents a glass and make a fine profit.

◆ ◆ ◆

Order a few gallons of our **Root Beer Extract**, put up one of our handsome "**Root Beer**" signs,* and get in line for some profitable business.

*We supply one sign with orders for one or two gallons of the extract, two signs with orders for five gallons or more.

EXTRACT OF VANILLA

(NON-OFFICIAL)

This extract is designed especially for flavoring ice cream and soda syrups.

It is prepared from selected vanilla beans.

It contains no artificial flavoring.

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It is **pure extract of vanilla**—a truly fine product, superior in flavor to certain "strictly U. S. P." vanilla extracts.

◆ ◆ ◆

Our **Extract of Vanilla (Non-official)** is economical.

Two ounces will flavor five gallons of ice cream. Cost of the extract, 7¼ cents!

One ounce suffices for a gallon of syrup for the soda-fountain. A thirtieth of a cent for the flavor for an ounce of syrup!

Every druggist who makes his own ice cream or conducts a soda-fountain should use this extract.

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